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STALIN AND THE USES OF PSYCHOLOGY

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SUMMARY

One of the standard features of a totalitarian system is the glaring discrepancy between its ideological self-image and the actual nature and working of the society. Nevertheless, the theoretical constructions produced by the state-controlled intellectuals are often closely related to the trends and needs of practical policy; they either serve to rationalize a policy or to solve some problem posed by a policy. This is especially true in Soviet Russia, which inherits from its origins a tendency to attach enormous importance to questions of theory. The intellectual history of the U.S.S.R. during the postwar years has been one of increasing subordination of most branches of scientific thought to the practical imperatives of state and party policy. The Lysenko story is a familiar illustration of this process. Another such story, that of the physiology and psychological implications of Pavlov's theories, is much less familiar, but in many ways even more revealing and important. It is the Pavlov story that concerns us in the present study.

The Pavlovian revival in the U.S.S.R. took place recently, after a long period during which Soviet psychologists paid little attention to Pavlov and his theories of the conditioned reflex. It is perhaps no accident that the Moscow conference at which this revival was officially set in motion coincided almost to the day with the launching of the communist invasion

of South Korea. For it was during the Korean war that the Western world witnessed the use of conditioning methods by the Communists to turn captured soldiers of the UN forces into instruments of communist propaganda. All during that time the authorities in Moscow were mobilizing the Soviet psychologists and physiologists to elaborate the ideas of Pavlov to the point where mind control would become a scientific technique and an effective political weapon.

This paper undertakes to survey the background and development of the Pavlovian revival on the basis of materials drawn from Soviet scientific discussions and theoretical journals. The author attempts to show that the new Pavlovianism, like Lysenkoism, grows out of a basic tendency of Stalinist thought to which he gives the name "transformism." The political motivation behind Stalin's directive on the revival of Pavlovian studies is examined, and the actual course and stages of the revival are traced in detail. Finally, the subsiding, after Stalin's death, of the militant extreme to which Pavlovianism had been driven in 1951 and 1952 is touched upon briefly. The exposition seeks to clarify wherever possible the relationship between the theoretical trends under consideration and the practical policy goals underlying them.

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Introduction

The influence of ideological conceptions upon the men who make Soviet policy has been frequently and rightly emphasized. Some observers are so deeply impressed by this influence that they tend to regard the Soviet system as a kind of ideocracy, a state ruled by an ideology. It is undeniable that ideology has been one powerful factor in the shaping of Soviet policies and actions from the time of the October revolution to the present. But one must not lose sight of the fact that, in Soviet Russia, the relationship between ideology and policy is one of mutual interaction. It is a two-way process in which theoretical conceptions affect the making of policy and practical considerations affect the content of the ideology. The ideological system is not a completely static thing. It has evolved over the years, and the realities of Soviet politics have been the driving force behind this evolution.

We may regard the Soviet ideology as consisting of two parts: a hard core of basic principles which has persisted more or less unchanged from the beginning of the Soviet period, and several surrounding layers of doctrine which have been subject to modification or accretion in accordance with the dictates of Soviet policy. There is no hard-and-fast line of demarcation between the two parts, yet the division between them is something which demonstrably exists. It may be useful to cite examples of what we mean

by outer layers of ideological elements which have been added, subtracted, or otherwise affected by considerations of Soviet politics.

In 1939, Stalin revised the well-known Marxist postulate that a socialist revolution would be followed by the "withering away" of the state. Far from withering away, the Soviet state had in fact swollen to colossal proportions since the revolution of 1917, and this development had to be rationalized; this meant that the Marxist postulate had to be corrected and amended. Stalin did this in his speech at the 18th Party Congress. In 1950, he went further and announced that even under "full communism" the Soviet state would not wither away unless the revolution had by then become a world-wide fact.

In this instance the doctrinal change in response to practical policy needs was clear and explicit. In others it has not been so clear. During the twenty years between 1929 and 1949, the classical Marxist view on the inconsequential role of the individual in history was altered in certain respects as a result of the re-establishment of an autocracy and the accompanying growth of the Stalin cult. Soviet ideology reacted by reviving the philosopher Hegel's concept of a "world-historic personality" in whom the social forces of an epoch come into focus and receive their most perfect expression. This doctrinal change was not announced in terms of a break with ideological tradition; it was simply

incorporated into the ideology. At the present time, a post-Stalin oligarchical Soviet regime again finds it necessary to make doctrinal adjustments in its political interests; and this time it is the "cult of individuality" that is condemned as "alien to Marxism." In all of these instances, outer layers of ideological doctrine were modified in response to political needs.

Insofar as elements of Soviet ideology are modified or readjusted in response to political considerations, ideological behavior may provide a key for predicting policy changes at an early stage. Ideological developments related to underlying movements of policy may occasionally become manifest before the movements become apparent in other ways. For example, the branding of the "cult of individuality" as alien to the Marxist-Leninist ideology was one of the earliest signs of the post-Stalin oligarchical trend in Soviet internal politics.

Ideological changes may also disclose the seriousness of a new policy orientation. If the ideological shifts are extensive, the probability is that the new policy orientation represents a relatively long-term intention on the part of the Soviet regime, one that may remain in effect at least for a number of years. The reason for this is that the regime is generally conservative about its ideological legacy, and does not tamper with it in the absence of a pressing motive. Consequently, the effect of policy trends

upon the ideological system provides one of the means of measuring their depth and importance.

The immediate purpose of this paper is to investigate certain Soviet ideological trends of recent years in their relation to the regime's policy in internal affairs. These trends center around the militant revival in Soviet psychology of Pavlov's teachings on the conditioned reflex in Soviet psychology. The Pavlovian revival which began in 1949, will be examined in connection with various developments in biology, political economy, and other fields, and the entire ideological complex will be related to a central policy motivation to which I have given the name "transformism." The final part of the study will consider various indications of a post-Stalin retreat from "transformism" and from the ideology associated with it. The study can then serve as a basis for a tentative interpretation of some of the changes in Soviet internal policy since Stalin's death that have aroused interest and speculation in foreign circles.

The Will To Transform

A prominent tendency of Soviet thought during the last years of Stalin's reign was the quest for formulas by which reality could be transformed and remolded to the dictates of the Soviet regime. The idea of transforming things in accordance with a formula was not in itself new; the notion of a revolutionary transformation of capitalist society is

as old as Marxism and is rooted particularly deeply in the ways of thought characteristic of Russian Bolshevism. In recent years this "transformist" concept seemed to acquire an obsessive hold upon the regime, and along with it went a mania for bigness and a tendency to apply the various formulas with a dogmatic and indiscriminate rigidity.

During the postwar years, "transformism" became the regime's reaction whenever it was confronted with a genuinely difficult domestic situation which clearly called for remedial measures of some kind. Instead of using the materials at hand and adapting its conduct to the realities present in the situation, it habitually responded with a grandiose project of transformation. In 1949 it came out with the so-called "Stalin Plan for the Transformation of Nature," an immense and costly undertaking of irrigation and afforestation which was to convert rural Russia into a fertile, blooming garden. Closely linked with this was the scheme for transforming the industrial landscape of the country by a series of giant "construction projects of communism"--canals, dams, and hydroelectric power stations which, it was boasted, would eclipse the best and biggest accomplishments along this line in the United States or any other country. To cite a further example, the Soviet regime, faced with an acute shortage of housing and office space in Moscow, responded with a plan for "transforming the face of the capital." This

was to be accomplished by the erection of an ensemble of skyscrapers which would rival those of New York, although, unlike New York, Moscow had abundant space for less ambitious structures which would have resolved the problem more quickly and economically.

The transformist tendency showed up vividly in the policies adopted toward the peasantry after the war. The peasants, disillusioned by the regime's failure to carry out the relaxation of the kolkhoz system which they had been led to hope for and expect, had relapsed into apathy. Instead of attempting to enlist the peasants' voluntary co-operation by increasing the incentives of work on the collective farms, the regime took the opposite course of bearing down heavily with disciplinary measures and repressions aimed at compelling the peasants to behave as expected of them. The discipline was reinforced with a series of far-reaching organizational transformations designed to meet the situation by a fundamental restructuring of rural life in Russia. The first of these organizational formulas was the amalgamation of the collective farms, an operation by which the total number of Soviet collective farms was reduced from about 240,000 to some 90,000 within a short period of time. There was also a formula, never actually carried out, for resettlement of the peasant population of the amalgamated collectives in new "agrotowns." Finally, in 1952, Stalin came out with a new and unprecedentedly

ambitious formula. Now the collective farms were to be transformed into state farms. Collective-farm property-- which in theory is owned co-operatively by the peasant members of the kolkhoz--was to be "elevated" to the status of state property. The formula for effecting this new transformation was "product-exchange," a barter arrangement which would supplant conventional trade between the government and the collective farms.

This kind of transformist thinking was clearly reflected in the well-known "biological discussion" of 1948, at which the Michurin-Lysenko doctrines on heredity were accepted officially, with the full authority of the Central Committee of the Communist Party and of Stalin himself. "Michurinism," as these doctrines were called, was a perfect model of transformist thinking. Their founder, the Russian naturalist I. V. Michurin (the "Great Transformer of Nature"), had, it was said, taken a "gigantic step forward" in the further development of Darwinism. Darwin had merely explained the evolutionary process, while "I. V. Michurin made evolution."^{1*} "Instead of the passive explanation of the phenomena of organic nature characteristic of Darwin," writes a Soviet philosopher, "the Michurin doctrine is a theory of the revolutionary transformation of organic nature in the name of the triumph of communism."² Michurin, it was said, had discovered laws and methods by which it would be possible to "mold organic forms." In his speech at the biological

* For notes see page 96.

discussion, the Soviet philosopher M. B. Mitin declared that Michurin had actually achieved this purpose: "Knowing the laws of plant development, I. V. Michurin revealed his genius by 'molding' new organic forms, and, moreover, forms that are needed by and are beneficial to man."³

The Michurin-Lysenko teachings are commonly associated with the Lamarckian principle of the inheritance of acquired characteristics. This was the practical crux of the matter, and the banner under which the liquidation of scientific genetics was carried out in the Soviet Union in 1948. However, the biological issue was only one aspect of an ideological one. Underlying the controversy over the inheritance of acquired characteristics was a clash between two radically different conceptions of the relationship between the organism and its environment. The Soviet geneticists whose work was based upon the Mendelian school postulated "autogenesis"-- evolution under the influence of certain hereditary forces inherent in the organism itself. In this view, the so-called "internal factors of development" assume primary importance, and the role of external environmental conditions in the evolutionary process is reduced to either a "starting mechanism" or a limiting factor. In 1946, Academician Schmalhausen, the most prominent theorist of scientific genetics in Soviet Russia, formulated the conception as follows:

In the development of any individual, environmental factors perform, in the main, only the role of agents

liberating the course of certain form-building processes, and of the conditions which make it possible to consummate their realization.⁴

It was essentially this "autogenetic" conception of the organism that Lysenko and his followers, backed by the full authority of the Soviet state, denied and attempted to expunge from Soviet biological thought. Lysenko denounced it in the following pronouncement:

This formalistic, autonomistic theory of a "liberating cause" in which the role of external conditions is reduced to the realization of an autonomous process, has long been demolished by the advance of progressive science; it has been exposed by materialism as unscientific in essence, as idealistic.⁵

Lysenko is led to this standpoint not by the weight of carefully sifted scientific evidence but by the imperatives of transformist ideology. Transformist thinking is fundamentally opposed to any conception which endows the object which is to be transformed (in this case, the organism) with developmental autonomy; it must not have spontaneous internal forces for growth or change which the transformer has to reckon with and respect, because that would impose unwanted limits upon the extent to which the object could be transformed from without.

The Michurinist doctrine arose out of this need to conceive the active factor of evolutionary change as residing not in the organism but in the conditions of the environment. For transformism, the role of the external conditions must be decisive. Accordingly, Michurinism proclaims the "unity of the organism with the environment," a conception which

holds that the organism has no separate existence apart from the particular configuration of environmental conditions which sustain it. In other words, the organism and its environment constitute an adaptational system. However, within this system the forces for change reside exclusively with the environment. Changing environmental conditions make the unity of the organism with the environment a "contradictory unity,"⁶ and the organism then resolves the contradiction by successive adaptations which become hereditary. The process is described by Lysenko as follows:

When an organism finds in its environment the conditions suitable to its heredity, its development proceeds in the same way as it proceeded in previous generations. When, however, organisms do not find the conditions they require and are forced to assimilate environmental conditions which, to some degree or other, do not accord with their nature, then the organisms or sections of their bodies become more or less different from the preceding generation. If the altered section of the body is the starting point for the new generation, the latter will, to some extent or other, differ from the preceding generations in its requirements and nature.⁷

Thus, the organism either resolves the tension by adapting itself to the new conditions and transmitting the adaptation to its progeny, or else it falls by the wayside; "organisms which cannot change in accordance with the changed conditions of life do not survive, leave no progeny."⁸ The Darwinian concept of a natural selection of chance variations of organisms engaged in a struggle for existence is thrown overboard. Michurinism rules out both chance variations and an intra-species struggle for existence. The struggle for

existence takes place between the individual organism and its environment. Variations are the organism's strictly determined responses to environmental change. They are its weapons in the struggle to survive when the external conditions change. The law of evolution is: Change or Die.

If, as this doctrine holds, environmental change is the sole active agent of the evolutionary process, then man's power of control over the environmental conditions of plants and animals enables him to direct their evolution according to his needs and purposes. He can then, as the participants of the 1948 session declared in their message to Stalin, "govern the nature of organisms by creating man-controlled conditions of life for plants, animals, microorganisms." The relationship of this trend of thought to the transformist motivation of the Stalin regime becomes transparently clear. The Michurinist agrobiology, said the final resolution of the session, is "a powerful instrument for the active and planned transformation of living nature."⁹ The validity of this claim is more than debatable. The recent attacks on Lysenko in the controlled Soviet press suggest that the post-Stalin regime in Russia found his theory fallible. But, in the period from 1948 to 1953, Lysenko's theory was an integral component of Stalinism. It provided a rationalization in the biological sphere for Stalinism's effort to impose its dictates upon the world, to transform reality according to its wishes.

The Cult of Necessity

But while reality can be transformed, the "scientific" laws that govern the transformation are themselves fixed, necessary, and immutable. The will to transform reality was coupled with a vehement denial that there was anything arbitrary, subjective, or risky and unpredictable about the various schemes for transformation which the regime put forward. In this respect, Stalinism made a break with a deep-seated tradition of Bolshevism. The characteristic Bolshevik belief in determinism, its general "denial of accidents," had always previously coexisted with belief in an "indeterminist tendency" with respect to the details of the future, with an allowance for the future's "partial unpredictability."¹⁰ In 1948, this tempered view gave way to an absolutely rigid and all-embracing determinism. All the processes of nature and society began to be viewed as working themselves out with an iron necessity; they were seen as perfectly predictable provided one could grasp their "regularities." Nothing whatever was left to chance. Lysenko's oft-quoted slogan "chance is the enemy of science" formulated the new attitude. Mendelian genetics, resting as it does upon the concept of chance mutations, was derided by Lysenko for having to "resort to the theory of probability" and for reducing biological science in this way to "mere statistics."¹¹ Michurinism, on the other hand, not only posed the far-reaching goal of transforming organic nature,

but guaranteed the attainment of the goal by absolutely predictable scientific means. It had worked out the "laws and methods" of obtaining directed variations and of perpetuating them in the species concerned. It was all based upon the discovery of "necessary relationships" in organic nature. And so, promised Lysenko, "we will expel fortuities from biological science."¹²

The mounting obsession with necessity, determinism, and the expulsion of chance from every area of Soviet policy came to a climax in Stalin's last work, Economic Problems of Socialism in the U.S.S.R., which was published on the eve of the 19th Party Congress in October, 1952. This work was in large part a polemic against previously approved tendencies to deny that the Soviet state was subject to an iron law of necessity in its economic development. Until its appearance, it had been an accepted practice for Soviet theorists to maintain that the all-powerful Soviet state, owing to its control over every aspect of the economic life of the country, could repeal or transform the laws governing its economic operations and create new ones in their stead. Thus, for example, it had been stated in a wartime document on political economy (published with Stalin's approval, if not under his direct authorship) that the Marxist "law of value," which explained the operation of capitalist economies, was also operative in the Soviet economy, but in a "transformed" version. But in 1952 Stalin thundered against

this idea of transforming laws of nature, for which he himself had been ultimately responsible, but which he now ascribed to "certain comrades." Those who had spoken of transforming laws were denounced as economic adventurers whose disdain of "objective regularities" was fraught with great danger.

For what would it lead to if the Soviet state should regard itself as competent to create or transform economic laws? It would lead, said Stalin, to "our falling into a realm of chaos and fortuities; we would find ourselves in slavish dependence upon these fortuities; we would deprive ourselves of the possibility not only of understanding but even of finding our way around in this chaos of fortuities."¹³ Therefore, he insisted, the Soviet state must base its economic policy upon "scientific laws." Scientific laws, in turn, were reflections of "objective processes in nature or society, taking place independently of the will of human beings."¹⁴

But Stalin simultaneously protests against what he calls the "fetishizing" of laws:

It is said that economic laws bear an elemental character, that the effects of these laws are inexorable, that society is powerless before them. This is untrue. This is fetishizing of laws, the surrender of oneself into slavery to laws. It has been shown that society is not powerless in the face of laws, that society, by perceiving economic laws and relying upon them, can restrict their sphere of action, use them in the interests of society, and "saddle" them, as happens with reference to the forces of nature and their laws.¹⁵

There is thus a contradiction present in Stalin's new doctrine about scientific laws. On the one hand, he vehemently

insists that Soviet policy must conform with "objective processes taking place independently of the will of human beings." This would eliminate choice and spontaneity from Soviet economic development, which would now be subordinated completely to the dictates of economic necessity. On the other hand, he cannot endure the thought of slavery to laws. He must regard his regime (or himself) as somehow superior to them, able to "saddle" them, subdue them, or "attain mastery over them," as one saddles and subdues the elemental forces of nature. He endeavors to resolve this conflict through the medium of the knowing mind. The function of the mind, he says, is to discover, grasp, study, and apply scientific laws. This intervention of the knowing mind enables him to feel that subordination to objective regularities is different from slavery to them. To settle this point, he cites the statement of Engels equating freedom with "apprehended necessity."

Why is it that Stalin, while dead set on saddling, subduing, or attaining mastery over the supposedly objective laws of social-economic development, finds utterly intolerable the thought of creating, repealing, or transforming them? What explains the enormous importance which this quasi-verbal distinction evidently had for him? The answer, I suggest, can be found in the psychological concept of "externalization," a process by which a person may experience his own thoughts, drives, or standards as operative in the

external environment. In Stalin's case this tendency eventually found expression in a legislative attitude toward reality. In other words, what he referred to as "objective scientific laws" were an externalization of his inner policy dictates; they were a projection upon future Soviet history of the formulas for social-economic development generated in his own mind. His own ideas appeared to him as natural necessities governing the development of society.

This process of externalization performed for Stalin a double psychological function. First, it stilled any gnawing uncertainty in his own mind about the validity of the formulas and directives which he evolved; there could be nothing arbitrary or capricious about formulas which represented "objective processes taking place independently of the will of human beings." Subjective considerations entered only in the sense that his mind was the first to discover them, as Newton had been the first to discover the law of gravity. Secondly, this mental operation shut off all possible argument. It is reasonable to question a proposition about Soviet policy, even if its author be Stalin, but to question a law of nature is pure impertinence. With this in mind, we can understand how irritated Stalin became at the idea of creating, repealing, or transforming the objective laws of nature and society; such an attitude toward laws was a potential threat to his infallibility, a challenge to his externalized policy dictates. His heavy-handed insistence on the objectivity of all scientific laws, on

their independence of the will of human beings, was a means of backing up his own claim to legislate the future course of nature and society. On the other hand, he could easily admit the possibility of "saddling" or "subduing" the laws, because this did not in any way affect their validity but only the manner in which society reacted to the discovery of them. It was his role as Supreme Architect of Communism to discover the laws, and it was the business of Soviet society to study them and put them into effect, and thus to "attain mastery" over them.

These considerations make it plain that the frantic preoccupation with causality, objectivity, and scientific laws which emerged in Soviet theoretical writings and the popular press during 1952 did not signify a retreat into a more empirical and pragmatic temper. Far from implying adoption of a scientific outlook in the proper sense of the term, this tendency was part and parcel of the drift of the regime (no doubt under the commanding influence of the dictator himself) into the realm of political fantasy and wish-fulfillment. The extreme and at times almost hysterical emphasis upon necessity, iron regularities, objective scientific laws, etc. apparently expressed an imperative need to cover up the arbitrary and willful character of the decisions to transform things to suit the dreams and dictates of the autocracy. The relation of the will to transformation and the stress on iron laws of causality is made clear in the

following passage from an authoritative commentary on Stalin's final work:

It is a matter not only of the impossibility of repealing the operative laws of nature or society, but also of the impossibility of their "transformation"However, if the laws of nature and society cannot be "transformed," nature and society not only can be transformed, relying upon objective laws perceived by man, but they already are being transformed in our country....The actual transformation of nature and society which is being effected on the basis of their objective laws reflected in the mind of man must not be confused with a mythical supposed "transformation" of these laws by man.¹⁶

The farther the Stalin regime went in its schemes for the transformation of nature and society, the more it needed the reassurance that everything was proceeding in accordance with objective laws. The appeal to mechanical causality was a rationalization of rampant adventurism in Soviet policy.

As a logical consequence of the trends discussed above, "subjectivism" became the ideological whipping boy of the Stalin regime in the early fifties. "Subjectivism" was a catch-all word for various intellectual sins involving in one way or another the attempt to transcend nineteenth-century notions of determinism.

One of the targets was the tendency (growing out of contemporary physics) to reinterpret causality and scientific law in terms of statistical probability. We have noted Lysenko's expression of scorn for Mendelian genetics because it "resorts" to the theory of probability and relies on "mere statistics." In later years this attitude led to a conscious rejection of any concept of scientific method that ruled out

the absolute character of scientific laws. The physicist Bohr, for example, was attacked in 1952 for attempting to transform the law of the preservation of energy from an absolute law of nature into a statistical law which only holds good on the average.¹⁷ The "indeterminacy principle" enunciated by Heisenberg in connection with the quantum theory proved highly bothersome to Soviet philosophers of science, who felt called upon to contend that beneath the superficial appearance of indeterminacy the micro-particles of quantum theory must fully conform to a law of "deeper causal determination" of the micro-processes.¹⁸ Especially strongly did they react against the speculation of Western quantum theorists to the effect that the electrons "choose their path," as it were, and thus (metaphorically speaking) possess a certain amount of "free will"; in other words, that there are certain moments when "nature makes a choice." The emotional intensity with which such thoughts were flayed reflects the psycho-ideological motivation of the Soviet position. To the Stalinist mind it was imperative that nature at all its levels, from the micro-processes to man, be governed by mechanical laws of causality. For only on that condition could it be regarded as infinitely manipulable. The behavior of every single object must be reducible to a rigid, hard-and-fast formula, discovery of which would make it possible to saddle or subdue the object, to gain complete mastery over it, to transform it at will. Therefore, autogenesis was unacceptable.

Nothing can behave in spontaneous ways not completely reducible to its objective formula. Everything "subjective" became suspect. The endowing of electrons with spontaneity was similar to the endowing of living organisms with developmental and mutational tendencies inherent in their genes. In either case the ideal of total control and transformability would be jeopardized. Here was an outlook which might fairly be described as the projection of totalitarianism upon Nature.

The Formula for Man

Inevitably, the postulates of transformism and mechanical causality penetrated the areas of Soviet thought concerned with the behavior of man. There were also special reasons for this apart from the general tendency. The most difficult problem faced by the Stalin regime in the postwar years was the profound passivity of the Soviet populace, its failure to respond positively to the goals set before it. Throughout all classes of Soviet society the hopeful moods which had prevailed widely during the war years evaporated as the regime's endeavors to mobilize them for fresh exertions in the postwar period got under way. The root of the matter was not the incapacity of people to endure another season of privation, but rather the meaninglessness of the sacrifices they were called upon to make, the pointlessness of Russia's being in eternal conflict with the rest of the world, the total lack of prospect for tranquility in their time. The result was widespread apathy, resignation, spiritual disengagement

from the goals of the Stalin government. This was in some ways more dangerous and disturbing to the government than outright oppositional activities. The latter could always be combatted and largely extirpated through external controls over people, whereas apathy was an insidious thing for which no easy antidote was available within the framework of the policies being followed.

The Soviet leaders decided that the problem could be solved, or at least greatly alleviated, by a massive propaganda effort coupled with improved controls over an intermediate element--the artists and writers--whose work in the service of the goals of the state would in turn influence the public in the required ways. This was the impulse behind "Zhdanovism," the drive which started in the summer of 1946 to enlist and organize the creative intelligentsia of the Soviet Union as a corps of conscious instruments of state policy, as missionaries of patriotic enthusiasm among the dispirited multitude of the Russian people. Zhdanovism and the attempt to elicit popular enthusiasm by means of a propaganda campaign continued through the postwar years, but with little apparent success. The whole undertaking was an example of Stalinism's characteristic over-evaluation of the potentialities of propaganda.

As indicated earlier, the stock reaction of the Stalin regime to a situation in which certain forces in the environment were proving recalcitrant to its goals was not to re-examine

the goals, but to search for a formula by which it could transform or remold the forces and thereby overcome their recalcitrance. If the material at hand was showing itself perverse to the dictates of the regime, then some way had to be found to conquer its perversity. The dictates themselves were righteous and unalterable; their frustration only evoked redoubled insistence upon their realization. In the case in question, the regime was faced with persistent popular apathy and passive resistance to its controls in various sections of Soviet society, especially the peasantry. People were not responding in the expected way to the techniques of political education and indoctrination. This led the Stalinist mind to find some magic formula for making people respond properly. If Russians were failing to respond to the goals set before them, then something was the matter with the Russians and with the means employed to elicit their response. Their minds had to be remolded to the point where inner acceptance of the Soviet ideology and all the behavior patterns it imposed would come as a matter of course. But for mind control to become a reality, it had to be based upon scientific bedrock. What was required was a formula for man.

By 1949, when the need for a new formula in terms of which human nature could be scientifically explained and "saddled" had become more or less obvious, the Soviet leadership found in the Michurin-Lysenko doctrines a theory of the

transformation of organisms on the biological level. Could it not draw in some fashion upon these doctrines for the purpose of constructing a more perfect science of man? Stalin himself tended to employ the biological analogy in his sociological thinking. In his essay on "Dialectical and Historical Materialism" published in 1938 as a chapter of the new Short Course, he had written that the science of society "can become as precise a science as, let us say, biology, and capable of making use of the laws of development of society for practical purposes."¹⁹ Lysenko, with Stalin's blessing, had become the reigning authority of a new biology which boasted of its ability to "expel fortuities" from this area of knowledge. If Michurinism could produce new species of plants and animals, might it not serve in the hands of the all-powerful Soviet state as a means of eventually creating a new species of "Soviet man"? An American observer has called attention to this theoretical implication in an article published only recently. He writes:

Since the laws of heredity are the same for micro-organisms, plants, and all species of animals, they equally apply to man. The challenge to the Kremlin is merely the demand to apply Lysenko's doctrine not only to plants and animals, but also to man. If Lysenko can transform living nature, he must also be able to transform man, to establish a new form of man "needed by socialist society" as the most important condition "for the transition from Socialism to Communism." Lysenko's genetic doctrine has been officially accepted in the Soviet Union; it claims to be able to create new species, thus also to create a new kind of man; why then, we ask, has no one thought of applying it to the Marxist prophecy of the higher phase of Socialism?²⁰

The same question appears to have been in the mind of Professor A. N. Leontiev, a Soviet psychologist who undertook to explore the implications for psychology of the 1948 session on genetics. He went so far as to make the bold claim that "psychology is being converted from a science which states and analyzes the psychic processes and the psychic characteristics of the individual into a science for changing them, into a science of the laws of transformation."²¹ However, Professor Leontiev did not give particulars of the application of Lysenkoism to psychology. His claim that Soviet psychology was being converted into a science of the transformation of the psyche was not backed up by any demonstration of the specific means by which the theory of Lysenko was furthering this conversion. A study of this and related materials carried out in early 1949 convinced a competent American investigator that "the genetics controversy does not add anything fundamentally new to Soviet psychology."²²

This impression was to prove somewhat deceptive in the light of later events. Actually, a "Michurinism for man" was germinating during the aftermath of the genetics controversy of 1948, but it did not come forth as a Soviet version of eugenics. It was a transference to man not of the specific biological concepts and techniques of Michurinism but of its basic underlying ways of thought, of its general theory of the relationship between the organism and the environment. In his search for a counterpart of Michurin in the field of

psychology, for a Russian who could qualify as the "great transformer of human nature," Stalin rediscovered Pavlov. He found the formula he needed for the scientific explanation and regulation of human behavior in the theory of the scientist whose investigation of higher nervous activity had resulted in a new and deeper understanding of the phenomenon of conditioning. The formula for man was the conditioned reflex.

Stalin's rediscovery heralded a Pavlovian revolution in the Soviet behavioral sciences. The principle of the conditioned reflex was made the basis of a new Soviet concept of man. According to this concept, man is a reactive mechanism whose behavior, including all the higher mental processes, can be exhaustively understood through a knowledge of the laws of conditioning, and can be controlled through application of this knowledge. The new movement began in 1949, and continued with ever-increasing momentum during 1950, 1951, and 1952. From the fields of physiology and medicine where it took its rise, it radiated out into numerous adjacent areas of science, including psychiatry, pedagogy, and psychology.

It must be emphasized once again that the motivating springs of this movement were not scientific but political, not intellectual in the proper sense but psycho-ideological. That is, the neo-Pavlovian movement did not grow spontaneously out of the scientific investigations of Soviet physiologists, pathologists, and psychologists working independently at their

respective problems. It was, on the contrary, imposed upon them from above by political authorities whose interest in the matter was nonscientific. According to Academician K. Bykov, who played a part in the Pavlovian revolution similar to that of Lysenko in genetics, the whole development took place "under the directing influence of the Party" and was inspired by Stalin personally:

The initiator of the events which have elevated the teachings of Pavlov in our country, the initiator of the creation of the most favorable conditions for the development of Soviet physiology for the benefit of the people is the brilliant architect of Soviet culture --Joseph Vissarionovich Stalin. We are indebted to Comrade Stalin for the victory of the Pavlovian cause in our country and for the creative upsurge which we now observe in the development of this most important field of contemporary natural science.²³

There appears to be no reason to doubt the testimony of Bykov on this crucial point.

Pavlov and Physiology

The year 1949 was the turning point in the official Soviet attitude toward Pavlov. Prior to that time, Pavlov's memory had been venerated in Soviet writings. He was looked upon as an eminent Russian physiologist who had made contributions of lasting importance to the development of world science through his work on conditioned reflexes and in related areas. The Soviet regime claimed credit for having provided him with favorable opportunities to continue his scientific work from the time of the October revolution until his death in 1936. The importance attached to this work was further

attested to by the fact that, under the leadership of Academician Orbeli and others, it had continued on a major scale after Pavlov died.

In the new phase, which began in 1949, this veneration of Pavlov and the benign but rather detached approval of his work gave way to a positive glorification of both the man and his teachings. As the potential ideological relevance of these teachings dawned upon the Stalin regime, they began to receive official endorsement in a new spirit of dogmatic authority. The new trend emerged in a Soviet film about Pavlov which was released early in 1949 as one of a series of patriotic documentaries on great Russian personalities of the past. Pavlov was portrayed as a fervent Soviet super-patriot, a materialist in his philosophy, a full-blown Michurinist in his biological views. He was shown preaching the gospel of conditioned reflexes at a scientific congress in New York in the face of skepticism and hostility on the part of the assembled representatives of Western science.

The next major development in Pavlov's rise was the nation-wide observance in September, 1949, of the one hundredth anniversary of his birth. Reports, lectures, and exhibitions on Pavlov were organized in various parts of the country. A Pavlov museum was opened in Leningrad in a house where Pavlov had lived. There were special ceremonies in his birthplace, the town of Ryazan. Leading articles in Pravda and other Soviet newspapers extolled him as a "great son of the Russian people." Beginning on September 21, a six-day

session was held in Leningrad and Moscow in which about three thousand Soviet scientists participated. Fifty-seven reports were delivered on the development of Pavlov's theories in the Soviet Union. Academician Bykov and other prominent Soviet scientists, including the president of the Soviet Academy of Sciences Vavilov, contributed articles on Pavlov to the press.

Although the Pavlovian revolution was at that time still in its formative stages, some of the themes of the centenary materials were highly indicative of the direction in which the thought of the regime was moving. The glorification of Pavlov was not motivated merely by the usefulness of his image for patriotic propaganda, but by the ideological appeal of certain Pavlovian concepts. Pavlov's suggestion that speech, the distinctive attribute of man, forms a "second signal system" which operates according to the laws of lower-level conditioning received public emphasis for the first time. The mounting antipathy toward "subjectivism" was evident in the boast by Academician Bykov that Pavlov "drove the soul out forever from its last refuge--our minds."²⁴ The logic of facts, wrote Bykov, led Pavlov to the necessity of "putting an end forever to the conception of the soul." And Pravda, in its anniversary editorial, pointed out that Pavlov ("the first among the physiologists of the world") had invaded the sphere of spiritual phenomena, established the material basis of higher nervous activity, and in this way had smashed for

all time the "idealistic fables about the supernatural character of our minds."²⁵ Moreover, this editorial revealed vividly the relationship of the new official interest in Pavlov to the transformist trend of thought:

To master nature, to subjugate her to the interests of man, to achieve unlimited power over the most intricate type of motion of matter--the work of the brain--such was Pavlov's ardent dream. Like another great Russian scientist, I. V. Michurin, Pavlov did not wish to await "favors" from nature, but took the view that it is possible and feasible for man himself to take these "favors," actively to intervene in nature, to remake her.²⁶

The coupling of the names of Pavlov and Michurin was far more than a casual rhetorical flourish. Reports in the press on various contributions by Soviet physiologists in the six-day session on Pavlov stressed the tendency to find an organic connection between Michurinism and the theories of Pavlov. Pavlov had at one time expressed the view that certain types of conditioned reflexes might turn into unconditioned ones, i.e., become hereditary. This would be a confirmation of the Michurinist thesis on the inheritance of acquired characteristics. Bykov and other speakers called attention to this important link between Michurinism and Pavlovianism. In more general terms, the common ground between the two doctrines was seen in the fact that for both of them the environment was decisive in the organism's development and transformation. The animal type was not something given once and for all, derived from heredity and invariable. On the contrary, as Bykov expressed it, "under the influence of the environment the type can change."²⁷ From

this point of view, Pavlov's teaching could be regarded as an application of Michurinism in the field of higher nervous activity.

The drift toward a dogmatic ideological endorsement of Pavlovianism was further reflected in a pamphlet published in Moscow in 1949, under the significant title: "A Reply to American Critics of Pavlov." Here for the first time the teachings of Pavlov were made into a side issue of the cold war. The writer of the pamphlet, Professor F. P. Maiorov, expressed the new point of view as follows:

The task of Soviet scientists is to maintain the world authority of the Pavlovian school. Hence we must not ignore but reply to American and other foreign criticism of Pavlov's teaching in the manner that this criticism merits.²⁸

The distinguishing feature of Maiorov's standpoint is that it polemicizes questions of experimental science. The concepts which Pavlov evolved out of his classical conditioning experiment on the salivation of dogs are viewed not as scientific hypotheses subject to modification but as positions to be defended at all cost and against all comers. Empirical criticisms of Pavlovian constructions by the American writers on conditioning, Hilgard and Marquis, are regarded by Maiorov as hostile sallies which have to be beaten down and crushed. His fire is directed primarily against foreign investigators who are basically in sympathy with the interest in conditioning, but who attempt to improve upon or go beyond Pavlov in one way or another. The message implicit in the pamphlet is that the Pavlovian fundamentals are sacred and untouchable.

The tendencies toward an official enthronement of Pavlov came to fruition in June, 1950, shortly after the publication of Stalin's papers in linguistics; this was an event, as we shall see presently, with which the Pavlovian revolution was closely connected. On June 22, 1950, Pravda announced that there was to be held a joint scientific session of the Academy of Science of the U.S.S.R. and the Academy of Medical Sciences to discuss problems of the physiological theories of Pavlov. In order to emphasize the importance of this session and to arouse public interest in the problems to be discussed, Pravda devoted extra pages on June 22, 24, and 25 to various articles, statements, and speeches by Pavlov in which he had developed his scientific opinions and defended the doctrine of the conditioned reflex. These materials were selected with a view to emphasizing the importance which Pavlov attached to the principle of determinism in the study of psychic phenomena. Thus one of the papers published was Pavlov's article "A Physiologist's Reply to the Psychologists." In it Pavlov stigmatized as a survival of animistic thinking the notion that there are "forces operating spontaneously in the living organism." His own attitude was implicit in the following rhetorical question:

As far as man is concerned, do we not hear even now of free will, and has not the conviction got rooted in the mass of minds that there is something in us not subject to determinism, i.e. a "subjective" element?²⁹

The theory of reflexes, continued Pavlov, is constantly increasing the number of phenomena in the organism connected with the conditions determining them, i.e., is more and more "determinizing" the activity of the organism as a whole. This held out the promise of the eventual total expulsion of the "subjective element" from the conception of human behavior.

The Pavlov session opened in Moscow on June 28. The opening speeches by the president of the Academy of Sciences Vavilov and the vice-president of the Academy of Medical Sciences Razenkov were followed by two main reports which set the tone of the whole session. The first of these was delivered by Academician Bykov and was entitled "The Development of the Ideas of I. P. Pavlov (Tasks and Prospects)." The second chief speaker was Professor A. G. Ivanov-Smolensky, whose theme was "The Paths of Development of the Ideas of I. P. Pavlov in the Field of the Pathophysiology of Higher Nervous Activity." Seventy-five speeches were made in the course of the ensuing discussion. Physiologists and medical specialists were predominant on the list of speakers. However, a number of psychologists also participated and the philosophers were represented by the well-known G. F. Alexandrov, now minister of culture in the post-Stalin government. Pravda for many days devoted considerable space to printing the texts of the speeches by the participants in the Pavlov discussion.

Although the physiological discussion of 1950 was an outgrowth of the same ideological tendencies which underlay the biological discussion of 1948, it differed from the earlier event in one important respect. The discussion of 1948 had marked the conclusive victory of one of two contending points of view between which controversy had been raging for years in the Soviet Union. There had been no comparable controversy in the field of physiology. Although there had been significant differences of opinion among Soviet scientists working in the Pavlovian tradition, these had not crystallized into diametrically opposite schools of thought engaged in a struggle for supremacy. The development of Pavlov's heritage had proceeded to a large extent in the spirit of Pavlov himself, which was that of a scientist, and his disciples had never regarded themselves as under obligation to cleave to the letter as well as the spirit of the master's teaching. While an immense amount of work had been carried out in the field of conditioning, such leading figures as Orbeli, Beritov (Beritashvili), and Anokhin had felt free to introduce correctives into the theory of conditioned reflexes as inherited from Pavlov.

It was this trend toward superseding the narrow confines of a mechanistic Pavlovianism that became the principal issue of the Pavlov discussion of 1950. According to the Party's new point of view which Bykov and Ivanov-Smolensky were expressing, any tendency to correct or supersede the original

doctrines of Pavlov was a betrayal of Pavlov. The Party was promoting a doctrinaire Pavlovianism from which any divergence was seen as a deviation. A disagreement with Pavlov on any point, however minor, and whatever the justification on scientific grounds, was from now on to be regarded as an act of heresy. To establish this point of view was the essential purpose of the "discussion" of 1950.

The keynote of the occasion was struck by Vavilov in the short speech with which he opened the session. The development of Soviet physiology since Pavlov's death, he said, had diverged in considerable degree from the "direct paths laid down by the great Russian scientist"; it had gone into secondary bypaths. The center of gravity of Pavlovian studies had shifted considerably from the "Pavlov line." The present session would be a turning point beyond which Soviet physiology would develop squarely in the Pavlovian heritage.³⁰ The same theme was developed by Bykov in his lengthy report in which the Pavlov line was authoritatively laid down. It was mistaken, said Bykov, to think of Pavlov's teaching as a mere addition to physiology or a new chapter in its development. It would be more correct to divide all physiology, and all psychology as well, into two phases: the pre-Pavlov phase and the Pavlov phase. The pre-Pavlov phase was associated with an "idealist world-concept," whereas the Pavlov phase is "in essence materialist." In this manner Bykov defined a basic division of physiological thought into the "two-world" terms of Soviet propaganda.

Everything pre-Pavlovian or non-Pavlovian was by definition alien to the Soviet world-concept. Non-Pavlovian influences in Soviet physiology could thus be logically traced to the infiltration of subversive foreign ideas. For the Pavlovian teaching, on the other hand, there was a respectable native precedent in the theory of reflex put forward by the Russian writer Sechenov in the nineteenth century.

Proceeding on this basis, Bykov and Ivanov-Smolensky attacked the leaders of all the deviationist tendencies in Soviet physiology and medicine. Academician Orbeli, who until 1948 had directed the main Pavlovian institutes in the U.S.S.R., and had been recognized as the principal custodian of the Pavlovian heritage, was the foremost target. He was criticized for having borrowed from foreign sources a theory of psycho-physical parallelism, according to which physiological processes are intermediate between parallel sequences of physical and psychical phenomena. It was also held against Orbeli that his research had concentrated upon the sympathetic nervous system. This was in conflict with "neurism," the point of view espoused by Bykov, Speransky, and others, according to which the cerebral cortex plays the leading part in all the processes taking place in the organism. But the sharpest criticism of Orbeli was reserved for his views that the principles of the conditioned reflex can explain only the more elementary forms of behavior, and that the existence of a "subjective world" must be reckoned with at the human level. Orbeli had written in 1947 that "in those temporary connections

which Ivan Petrovich (Pavlov) studied, we have only the most elementary process of higher nervous activity." And he had called attention to the phenomenon in man of resistance to the formation of conditioned reflexes. Both of these propositions were now totally unacceptable. The conditioned reflex was now regarded as a universal formula for all higher nervous activity, and no exceptions could be allowed, even at the human level, to the principle of total determination by conditioning. "Also incomprehensible," added Ivanov-Smolensky, "is Academician L. A. Orbeli's assertion that a qualitative singularity of man is the rise in him of a 'subjective world.'"³¹ Human organisms, in other words, are to be seen exclusively as objects reacting to the environment in accordance with the laws of conditioned-reflex behavior.

The criticisms of Beritov, Anokhin, Kupalov, and others were likewise aimed against tendencies in their work toward overcoming a strictly mechanistic Pavlovian orthodoxy. Professor Anokhin, one of the most gifted physiologists among the followers of Pavlov, was denounced by Bykov for attempting to "'correct' the classical teaching of Pavlov with theoretical fabrications of foreign scientists."³² Anokhin had found it necessary to re-examine the concept of the conditioned reflex as developed by Pavlov, and in so doing had introduced "the purely psychological, entirely subjective concept of a 'reaction of active choice.'"³³ Academician Beritov, finding the conditioned reflex inadequate to explain the more intricate phenomena of mental life, had posited in man and the higher

animals a spontaneous "psycho-neural activity" for which there must be a special neural substratum distinct from that upon which conditioned-reflex activity is founded. Similarly, Professor Kupalov had postulated the existence in the higher animals of spontaneous forms of activity not reducible to discrete reactions to specific environmental agents. He had also called attention to a special kind of "abbreviated conditioned reflexes." In these instances an external stimulus produces no visible reaction in the animal, but causes only a definite internal excitation of the cerebral hemispheres connected with "what has acquired the name of internal experiences, feelings in their various forms." To this Ivanov-Smolensky replied:

By explaining this or that behavioral act of animals as a result of their inner experiences, as an expression of their subjective world, as an external manifestation of their feelings, emotions, etc., Professor Kupalov departs from the strictly objective method of study worked out by I. P. Pavlov and from the basic principles of the Pavlovian physiology of higher nervous activity.³⁴

In the new Pavlovian orthodoxy there was no room for subjective feeling and experience, or for spontaneous activity in the higher animals and, specifically, in man. The principle of determinism required that behavior consist only of definite responses to definite stimuli, and that the connections between these two orders of phenomena be thoroughly explicable and controllable through a knowledge of the laws of conditioning.

The relationship of the Pavlovian doctrine to the transformist goals of the Soviet regime and to the Michurinist

ideology was laid down in explicit terms by Bykov and Ivanov-Smolensky. Pavlov, declared the latter, had aspired not only to study but also to master the phenomena being studied, to direct them, command them, change them in the required directions. Through a knowledge of the laws of conditioning combined with control over the environment, behavior could be conditioned in whatever ways were considered desirable. In addition, the conditioned connections, repeated for a number of generations, can "by heredity turn into unconditioned ones." Pavlov's speculation about the possibility of the inheritance of conditioned reflexes now became a firmly established postulate, which both Bykov and Ivanov-Smolensky accepted more or less as a matter of course. The close correlation of the Pavlovian and Michurinist teachings is established by Ivanov-Smolensky as follows:

It is not hard to see that in the question of the decisive role of the external environment in the adaptive activity of the nervous system, in the question of the transition of conditioned, i.e. acquired reflexes into unconditioned, hereditary reflexes, and in the question of the inseparable ties between the study of the physiological functions and the mastery and control of them, the Pavlovian teaching fits in directly with the creative, native Russian Michurinist biology.³⁵

The organic relationship between Michurinism and Pavlovianism in the minds of the Soviet proponents of these doctrines was reflected in the later appearance in Soviet writings of a new hyphenate expression: the "Michurin-Pavlov biology."³⁶ According to this conception, the common basic principle of the

two doctrines was the "law of the unity of organism and environment." The difference between them related only to the spheres of application of the basic principle. Michurinism applied it to agriculture, while Pavlovianism applied it to physiology, psychology, and medicine.

As noted above, the Soviet philosophers were represented at the Pavlov session in the person of G. F. Alexandrov. His rather diffuse speech was devoted in large part to raising Pavlov's philosophical stature. Here he clashed with Orbelli and Anokhin, both of whom had taken the view that Pavlov, though a splendid empirical man of science, was lacking in the powers of philosophical generalization. But now that Pavlov was being glorified, now that his theory of conditioned reflexes was being given an integral place in the Soviet ideology, such opinions had to be firmly rejected, and Alexandrov addressed himself to this task. Pavlov, he declared, was a "scientist of genius and a conscious exponent of materialism." The purpose of all his work was to learn how to "direct biological phenomena." Herein lay its great philosophical significance. To illustrate his meaning, Alexandrov quoted with approval a statement which Pavlov once had made about breaking down the nervous system and putting it back together again. "If in our experiments," Pavlov had said, "we can learn not only to break down the nervous system but also to put it back in order, then it will really be shown that we have mastered the processes and command them."³⁷

The session paid a great deal of attention to the implications of Pavlov's teaching for medicine, especially for psychiatry and neuropathology. The situation in psychiatry differed substantially from that in physiology proper in that a group of leading Soviet psychiatrists, headed by Professors A. S. Shmaryan, M. O. Gurevich, and R. Ya. Golant, had preached for many years the view that the application of Pavlovianism in psychiatry contained a "tremendous mechanistic danger." Gurevich had written, as late as 1950, that conditioned reflexes "cannot be regarded as the basic principle uniting all the activity of the brain," and Shmaryan, in an ill-fated newspaper article of 1937, had described the development of Pavlovianism by A. G. Ivanov-Smolensky as "conditioned-reflex pettifoggery."³⁸ In place of a Pavlovian psychiatry, Shmaryan had developed the conception of "brain morphology." This conception denied that the reflex principle was basic in the activity of the nervous system. Shmaryan's research was concentrated upon discovering the anatomic localization of psychic disorders. The representatives of this trend were now denounced for introducing the principle of the "spontaneity of brain functions," for "indeterminism," and for failing to equate psychic and higher nervous activity. They were sharply reminded that, according to Pavlov, the term "psychic" means "higher nervous." An interesting by-product of the attack upon "brain morphology" was the neo-Pavlovian conclusion that the operation of leucotomy is "therapeutically unjustified."³⁹

The discussion of the relation of Pavlov's teaching to psychiatry occasioned a renewal of the standard Soviet attacks upon Freudianism and psychoanalysis, especially in their American variants. The Freudian conception, said Bykov, is "alien to the disciples and followers of I. P. Pavlov." Soviet psychiatry required a "physiological explanation" of the origin of neurotic conditions, i.e., a reflexological explanation. Neuroses would be seen as disorders of the central nervous system, and therapy would be founded upon conditioning methods. In this connection Bykov assailed what he called the "American concept of psychosomatic medicine." The very phrase "psychosomatic medicine" implied to his mind a "dualistic view," and, in order that no such implication should be present in Soviet terminology, he proposed to adopt in its place the phrase "cortical-visceral physiology."⁴⁰

A notable detail of the Pavlov session was the frequent reference to hypertension, or high blood pressure, as foremost among the diseases which would prove amenable to therapeutic methods derived from the Pavlovian arsenal. This is interesting in view of the fact that Stalin himself apparently suffered from hypertension in a chronic form; according to the official announcement of March 4, 1953, the brain stroke from which he died resulted from his condition of hypertension. Whether or not the clinical interests of Soviet medicine were guided in part by Stalin's personal medical needs, the fact remains that

the participants in the Pavlov session of 1950 devoted a remarkable amount of attention to the problem of hypertension. Both of the leading speakers, in particular, laid special stress upon a Pavlovian approach to the cure of this complaint. The Pavlovian view, as they developed it, was that this, like other internal diseases such as ulcers, is ultimately caused by a disordered state of the cerebral cortex. In technical Pavlovian terms, employed by A. L. Myasnikov in his speech at the session, hypertension is based upon "disorders of the first and second signal systems," i.e., the nonlinguistic and linguistic systems of conditioned reflexes. This being so, therapy should concentrate upon bringing influence to bear upon the patient via the central nervous system. Ivanov-Smolensky mentioned sleep treatment, hypnosis, and suggestion as three specific techniques for possible use in this connection.⁴¹ Bykov alluded to some sort of linguistic therapy, saying that "speech can cause deep changes in the whole organism."⁴² Can it be that Stalin was in effect mobilizing the Soviet medical profession to discover some Pavlovian miracle treatment for his high blood pressure? The answer to this question must remain for the time being one of the intriguing mysteries of Stalin's reign. However, in view of what is known about the sustained efforts of Soviet specialists to satisfy Stalin's interest in pushing back the frontiers of human longevity, an affirmative answer to the question must be regarded as entirely possible.

The results of the Pavlov session were summed up in a flowery message to Stalin from its participants, and in a lengthy decree which was promulgated in the session's name. The decree opened in the usual fashion by castigating past deviations from the newly established line. The session condemned the "unjustified attempts" of various scientists to form their own schools in physiology and thereby to oppose themselves to the general trend of the teaching of Pavlov. It criticized the Ministry of Public Health, the Ministry of Higher Education, the biology department of the Academy of Sciences, and the Presidium of the Academy of Medical Sciences for underestimating the significance of Pavlov. It struck out at the "feeble penetration" of Pavlovian ideas into the course curricula and textbooks in medicine, psychology, pedagogy, physical education, veterinary work, and animal husbandry. It then went on to map out a sweeping and detailed program for the Pavlovianization of these sciences and of the teaching of them in the schools and higher educational establishments of the Soviet Union. The executive bodies of the Academy of Sciences and Academy of Medical Sciences were commissioned to "work out in the shortest possible time the necessary organizational and scientific measures for the further development of the theoretical fundamentals and the application of the teaching of I. P. Pavlov in medical practice, pedagogy, physical education, and animal husbandry." Scientific research plans in various disciplines were to be urgently revised along Pavlovian lines. Curricula were to be reorganized, textbooks

rewritten. The learned journals were ordered to launch "broad discussion" of basic problems of the Pavlovian theory. And annual conferences were recommended to bring together the best scientific minds for an exchange of views on these problems.⁴³

The organizational measures called for in the decree were not long in coming. The principal one was the establishment, under the Presidium of the Academy of Sciences, of a special new organ for overall control and co-ordination of the Pavlovianization of the physiological sciences. It was called the "Scientific Council on Problems of the Physiological Theory of Academician I. P. Pavlov." Bykov, as might have been expected, was appointed chairman of the council. He was also made director of a new I. P. Pavlov Institute of Physiology, which was set up in place of three former institutes headed by Orbeli. Finally, a new Institute of Higher Nervous Activity was established in Moscow with Asratyan as its director and Ivanov-Smolensky as his deputy. Preparations were made for the publication of a new Pavlov Journal of Higher Nervous Activity. During the succeeding months the Scientific Council swung into action, holding at least six major sessions between mid-1950 and mid-1952. Much of its time and effort at these sessions was taken up with berating of Orbeli, Beritov, and Anokhin for alleged failure to abandon their old views despite the formal recantations which all three had made.

The Reconstruction of Psychology

Although problems of physiology and medicine largely dominated the deliberations of the Pavlov session, its momentous implications for Soviet psychology did not escape the minds of those present. A "reconstruction of psychology on scientific principles" was one of the tasks which the session's decree laid down for the specialists in this department of knowledge. Among those who addressed the session were two of the most prominent Soviet psychologists, B. M. Teplov and S. L. Rubinstein. Teplov's speech was a piece of abject self-criticism on behalf of Soviet psychology as a whole. The task of constructing a system of psychology based upon the teachings of Pavlov had not, he said, been fulfilled.* All of the existing textbooks and treatises on psychology were "utterly unsatisfactory." Soviet psychologists had suffered from "a fear of the simplicity and clarity of the Pavlovian teaching," a fear which reflected in part the regrettable influence on Soviet psychologists of certain fashionable foreign schools in psychology such as the gestalt trend. Now, however, Soviet psychology was entering upon a new stage of its development, the Pavlovian stage.⁴⁴ Speaking in a similar vein, Rubinstein declared that the Pavlovian teaching was "destined to become the powerful weapon of a profound reorientation of psychological science." He went on to say:

* For understandable reasons, Teplov failed to add that this task had also not been set.

Our psychology must develop as a science capable of proceeding from the description of psychic phenomena to their explanation, and from their explanation to the directed alteration of psychic processes and efficient formation or education of the psychic qualities of man as builder of the communist society.⁴⁵ [*Italics added.*]

The underlying motivations of transformism emerge rather clearly as the driving force behind the projected reconstruction of Soviet psychology.

In order properly to assess the impact of the Pavlovian revolution upon Soviet psychology, it may be useful to call to mind some of the principal facts relative to its prior development. The story begins back in the turbulent early twenties, when the scientists of Soviet Russia were not yet subject to the airtight ideological controls which later became so characteristic an element of the Soviet regime. At that time psychology's right to an independent existence was challenged by various behavioristic schools. These were outgrowths of the study of reflexes which had begun long before the revolution, under the leadership of Pavlov and Bekhterev. Doctrines such as Bekhterev's "reflexology" and Kornilov's "reactology" arose to claim for the study of overt reactions the field which had traditionally belonged to the science of the psyche. As Teplov wrote in a review of the historical development of Soviet psychology, the psychologists of that time were unable to depart from a behavioristic position which regarded the subject of psychology as "man's behavior and not his psyche, not his consciousness."⁴⁶ Bauer calls the general conception of man implicit in the

Soviet psychological theories of the twenties a "mechanistic model of personality." According to this model, "man was an adaptive mechanism that responded to external forces in such a way as to maintain an equilibrium between himself and his environment."⁴⁷ Allowance was made for social influences among these external forces. At the same time, the dynamics of adaptation were seen predominantly in physiological or biological terms.

The thirties witnessed the emergence of a new Soviet psychology, which reinstated the traditional view that the proper subject-matter of this discipline was consciousness or the psyche. Those who were instrumental in effecting this transition found a powerful fulcrum in Lenin's "theory of reflection," a philosophical doctrine according to which consciousness is a mirror of external reality. The victory of these forces in what was called the "battle for consciousness" presaged a violent reaction against behaviorism in general and conditioned-reflex psychology in particular. Reflexology and reactology were condemned for their denial of consciousness, for reducing man to an adaptive mechanism responding passively to external stimuli. The new orientation was described by Teplov as follows:

The reactionary political import of the "denial of consciousness" and the view of man as a reactive automaton which constitutes the real essence of American behaviorism was comprehended to the full. One of the articles taking stock of the "reactological discussion" gave this description of behaviorism: "The entire reactionary nature of this approach to man

is perfectly clear. Man is an automaton who can be caused to act as one wills! This is the ideal of capitalism! A working class without consciousness, without thought, which can be trained to any activity--this is the dream of capitalists the world over."⁴⁸

One of the leading exponents of the new point of view was S. L. Rubinstein, who put forward in a pivotal article of 1934, and in later books, the thesis of "the formation of the human psyche in the process of activity." The "process of activity" was conceived not in reflex terms but autogenetically, i.e., as spontaneous and purposive. And consciousness was assigned a guiding and regulating role in the goal-directed activity of the human individual. On this basis, the categories of the traditional functional psychology (perception, imagination, will, emotion, etc.) were reintegrated into a nominally "Soviet" system of psychology, which received its definitive formulation in Rubinstein's Stalin Prize volume, Foundations of General Psychology, first published in 1940. This book remained the classic of Soviet psychology until the Pavlovian resurrection of 1950, after which it was consigned to the limbo of Stalinism's discarded doctrines.

The ideological premises of the dominant psychologies of the twenties, although in agreement with those of the regime, stemmed largely from the psychologists themselves, or from schools of psychologists. In contrast, the new psychology which emerged in the course of the thirties

reflected a conscious intervention of the purposes and preconceptions of the Soviet regime. These demanded a new model of human nature which would endow Soviet man with individual responsibility for his character and conduct. The earlier mechanistic model of personality had made the environment exclusively responsible for the way in which human beings develop. This was in harmony with the Marxist postulate that human beings are products of the social structure and can only be changed by a renovation of it. The Russian Marxists of the twenties widely believed that such a radical renovation of the social order was in progress, and that this would solve the problem of the renovation of man. This orientation was upset by the Stalinist claim of the thirties that "socialism" had already been achieved in Russia. Since the new institutional order had become socialist by definition, it could no longer be accounted responsible for the deviations of citizens from the norm of Soviet conduct. The individual citizen himself had to be made responsible for his conduct, and for this purpose he had to be endowed with will and consciousness, with the capacity for purposive behavior, for molding his own character and actions by reference to an ideal. "Consciousness," writes Bauer, "is the concept whereby the Soviet citizen is, in fact, liberated from determinism and tied to the service of the state."⁴⁹

This new model of human nature, the "New Man," was not of course a snapshot of reality, but an imposed norm, an expression of the needs and wishes of the state. Soviet

citizens failed in myriad ways to measure up (or down) to the standards of conduct set by the state authority. Consequently, some concept was required by which deviations from the norm could be rationally explained. The social order itself was by definition absolved of all responsibility for them. Hence the view was taken that deviations from the norm of character and conduct sprang from "survivals of capitalism in the minds of people." These had either lingered on from the past by force of inertia, or they were deliberately kept alive and stirred up by hostile forces outside the Soviet Union. Therefore, to the responsibility of the individual for shaping his life was added the responsibility of the Party and the state for employing all the devices of education and indoctrination to purge Soviet minds of "survivals of capitalism." (This sharp increase of emphasis upon the ideological function of education explains the official reaction against "pedology" in an important decree issued in 1936.) Thus, the radical environmentalism of the twenties was not counteracted in the thirties by an equally radical anti-environmentalism. In the new system the environment was, as Bauer writes, "partitioned" into (1) the social order and (2) the educational agencies of the state. The latter were assigned a decisive role in the formation of the character of Soviet citizens. Responsibility for what the individual made of himself was divided between the individual and the organs of indoctrination.

Although the ideological upheavals of the early postwar years (1945-1949) had repercussions in Soviet psychology, they were not revolutionary in character. These years witnessed in "Zhdanovism" a feverish intensification of the drive to mold the thought and conduct of Soviet people by the conventional techniques of political education, but that involved no departure in principle from the view of the function of education which had come to prevail in the thirties. The image of Soviet man grew increasingly chauvinistic, but this called for no alteration of the basic model of personality worked out before the war. This is confirmed by the discussion in 1947 of the new edition of Rubinstein's book that had been published the previous year. Prompted by Party spokesmen, the psychologists who took part in this discussion made numerous criticisms of Rubinstein, but none that struck at the new model of personality. The principal criticism was that Rubinstein's book was about "man in general" rather than the "psychology of Soviet man" in particular. This criticism was essentially verbal. It was not for his model of personality that Rubinstein was attacked, but for his tendency to universalize it, for his failure to label it at all times "Soviet man." During the campaign against "homeless cosmopolitanism" in 1949, this attack against Rubinstein was revived in much stronger form. Now the book was denounced as antipatriotic because of its universalistic overtones. But its conceptual substance emerged from this denunciation more or less unscathed.

There is abundant evidence to show that during the early postwar years the professional psychologists of the U.S.S.R. were quite oblivious of the impending revolutionary reorientation of their science on the basis of the reflex principle. Reflexology in all its forms was viewed as an aberration of the nineteen-twenties, as a stage which had been traversed and transcended once and for all. Furthermore, there is no evidence to suggest that the psychologists regretted this, that some amongst them were enthusiastic proponents of a return to Pavlov. Reflexological concepts do not appear to have been particularly congenial to their ways of thought. As Teplov pointed out in his speech at the Pavlov session of 1950, only on five of the 685 pages of Rubinstein's book could one find reference to matters in any way related to Pavlov. Perhaps still more significant is the fact that the virtual ignoring of Pavlov did not figure among the many criticisms which were made of the book in the 1947 discussion, and again in 1949. No one then had seen anything wrong or anomalous in the fact that Rubinstein's position was non-Pavlovian. The irrelevance of the reflex concept to an understanding of the higher forms of human experience was taken more or less for granted. Teplov, for example, had written in 1947:

The explanation of all the phenomena of psychic life by the principle of the formation of associative or conditioned-reflex connections is, of course, utterly wrong....By itself the theory of conditioned reflexes is not even adequate for understanding the physiological foundation of human behavior.⁵⁰

At the time it was made, this statement was not at all daring or unorthodox; it merely articulated a view which had come to be accepted with the force of dogma by all the leading figures of Soviet psychology.

That was how matters stood when the command was issued in 1950 for Soviet psychology to be radically reconstructed on the basis of the reflex principle. Implying as it did that this discipline had been on the wrong track for the past twenty years, the command came as a shock to those on the receiving end. It forced the psychologists to raise again some of the most fundamental problems concerning the concepts and methods of psychology: the relation between psychic and physiological phenomena, the problem of consciousness, the status of psychology among the sciences, the admissibility or inadmissibility of introspective methods, etc. The pessimism and perplexity which this prospect aroused among the psychologists were reflected in an incident which occurred some time after the Pavlov session. A number of psychologists wrote a collective note to Ivanov-Smolensky, inquiring "what is the subject of psychology and what are its tasks?" The note was signed: "Group of Psychologists Seeking the Subject of their Science."⁵¹ There is no record that they received a reply. According to a Soviet source, in the aftermath of the Pavlov session many of the psychologists were "at a loss" in the face of the necessity it had proclaimed for a reconstruction of their

science. This found expression "either in liquidator attitudes toward the subject-matter of psychological science or else in efforts somehow to cut themselves off from the Pavlovian teaching, to stand aside and wait it out until the reconstruction had taken place."⁵²

The first attempt to face the problem came in September, 1950, when Teplov gave a report in the Institute of Psychology in Moscow on the results of the Pavlov session and their significance for psychology. His idea at that time appears to have been that the new movement might be kept within the bounds of moderation. The reconstruction of psychology, he suggested, would consist in providing a profound physiological foundation for each psychic phenomenon studied. Psychology would continue to study "psychic content," i.e., the subjective world of man, but in closest conjunction (in "unity," to use his expression) with its physiological "mechanisms." Pavlovianism would thus be complementary to the established system of psychology, but would not usurp its place entirely. This attempt to salvage something from the wreckage of pre-1950 Soviet psychology did not meet with success. Teplov and others who reasoned along these lines evidently failed to grasp the truly radical nature of the goal which Stalin had set for psychology. Not long afterward, Pravda expressed official disapproval of half-way measures in an editorial which sharply took the psychologists to task for "seriously lagging behind present demands"

and "not showing themselves active in the investigation of vitally important questions."⁵³ The prevailing view from then on was opposed to the dualistic conception tentatively advanced by Teplov. Such a conception was pronounced defective because "it preserves the system of concepts of pre-Pavlovian psychology," i.e., the traditional psychic categories.⁵⁴ The task was not simply to relate the psychological categories to a groundwork of physiological mechanisms. It was to rework the psychological categories themselves in Pavlovian terms, to understand all the "psychic content" on the basis of the reflex principle.

The next major development was a conference on psychology held in Moscow in July, 1952, and attended by over 400 psychologists from all parts of the country. Its task was to take stock of the results already achieved in the Pavlovian revolution and to chart its future directions. As usual, much emphasis was placed on "organizational measures." In its final resolution, the conference proposed the establishment of a Scientific Council on Questions of Psychology which would perform for psychology the same functions of control and co-ordination that the Scientific Council on Problems of the Physiological Teaching of Academician I. P. Pavlov was performing in the physiological sciences. The two institutions were to be made interlocking by the exchange of representatives. This proposal was adopted, and

S. L. Rubinstein was appointed director of the new organ for the Pavlovianization of psychology. The conference also made the recommendation that all the textbooks on psychology be rewritten according to Pavlov, and that annual psychological conferences be called to further progress in the tasks facing this science. Finally, it requested the Presidium of the Academy of Pedagogical Sciences, under whose auspices the conference was held, to petition for permission for the psychologists to publish a journal of their own, Problems of Psychology.*

The conference admitted in its final resolution that the reconstruction of psychology was proceeding at an "inadmissibly slow" pace, and urged that the task be approached more boldly and resolutely. Professor A. A. Smirnov, the main speaker, declared that the reconstruction had to be "fundamental" and "decisive." It had to extend to "the entire content of psychology." The psychological concepts had to be radically recast, purged of "all elements of idealism, subjectivism, introspectionism."⁵⁵ However, this did not mean, according to Smirnov, the reduction of psychology to physiology, the dissolving of psychological concepts into physiological ones. The concept of consciousness, for example, was not to be discarded, as some psychologists had proposed in the aftermath of the Pavlov session, but was to be so interpreted that all the phenomena of conscious experience could be strictly correlated, on the

* Petitions for permission to publish learned journals are made to the Central Committee of the Communist Party, which apparently alone has the authority to decide such matters. It is noteworthy that one year after the psychologists requested this action, permission had not yet been received. Consequently, the psychologists had to continue publishing their materials in the journals of philosophy and pedagogy.

basis of the reflex principle, with their environmental determinants. Far from facing liquidation, psychology was destined to occupy a position of crucial importance among the sciences. By employing the theory of Pavlov, it would open up the subjective world of man to objective study and thereby to regulation.

Those were the principal premises worked out in the course of the 1952 psychological conference. Implicit in them was a model of personality which differed from the "new man" of the thirties and forties as radically as the latter had differed from the mechanistic model of personality which had prevailed in the twenties. The materials of the conference, and a series of discussion articles on psychological theory published in the journal Problems of Philosophy in 1952 and 1953, enable us to fill in some of the details of the new personality model.

The Pavlovian Model of Personality

The leading Soviet psychologies of the twenties were characterized, as we have seen above, by their exclusive interest in overt behavior and by their attempt to explain it on the basis of a rigid environmental determinism. In the new model of personality which emerged in the thirties, the center of gravity shifted to the subjective aspects of behavior. The individual recovered his psyche. His overt behavior was now seen as a product of processes taking place inside him as shaped by his previous experience and the

educational efforts of the Soviet state. While the principle of causality was not abandoned, there was a significant shift of emphasis away from environmental determinism and toward an organic explanation of behavior. Soviet man was accorded in psychological theory a capacity for self-determination, for consciously regulating his conduct by norms and ideals which, though assimilated from the "socialist environment," were a genuine part of him and hence commanded his sincere and spontaneous allegiance. This was in essence an optimistic conception. It presupposed that people growing up in the Soviet social order and subject to the formative influences which the state could bring to bear upon them through the family, the school, the press, and all the other channels of control would, in the vast majority of instances, develop true "Soviet selves." Once formed in this manner, the personality system would become an autonomous force in the individual's life, ensuring his loyalty to the regime, his conformity to its doctrines, and his allegiance to its goals. Born in the thirties, contemporaneously with the early five-year plans, this conception of the New Man corresponded to the optimistic spirit which then still survived among Party circles and sections of the youth and intelligentsia. But the age of faith was coming to its end. Ahead lay the bitter experience of the purge years, the misery of war, and the material and spiritual trials of the war's bleak aftermath.

Seen in this perspective, the Pavlovian revolution of the early fifties marks an event of historical significance: the breakdown of the optimistic conception of man with which the Stalin regime had officially been operating for nearly two decades. It was a reflection of the quiet resistance of the majority of Russians to the Sovietization of their real selves, a resistance which had proved relatively immune to the massive propaganda pressures of the postwar years. The fact was that Soviet society, with all its controls and its immense resources for indoctrination of the citizenry, was not producing a generation of New Men. The optimistic model of personality endowed the individual person with a capacity of spiritual self-determination, but the results did not bear out the confident prediction of the thirties. And there was nothing in the working model which would point the way toward the attainment of better results. Naturally, these implications were not openly acknowledged in the writings of the early fifties that centered around the teaching of Pavlov. But they were omnipresent below the surface of these writings, and occasionally showed through unmistakably.

The attempted reconstruction of Soviet psychology was far more, of course, than a confession of the bankruptcy of the individualistic model of personality. It was also an expression of Stalin's iron determination to elaborate a new model which would answer the needs of his regime, a truly workable model based upon a perfected technique of soul-forming

which would leave nothing to chance and, if properly mastered, could not fail to achieve the goal. In his address to the psychological conference of 1952, Professor Smirnov formulated the goal rather candidly:

Soviet psychologists are confronted in all definiteness with the problem of the formation of the personality of man, the formation of it in the concrete social-historical conditions of people, in the conditions of our socialist reality, under the influence of the educational work of the school.⁵⁶
[Italics added.]

Since the master-formula for the attainment of the goal was to be the conditioned reflex, the model of personality had to be revolutionized. Man had to be understood as a being whose character and conduct are controlled at every step by the conditioning process, whose every psychic act is a reflex. As Smirnov put it, "I. P. Pavlov's teaching on temporary connections is a firm basis for understanding all the conscious activity of man."⁵⁷ Thus the reflex mechanism was seen as an all-inclusive key to the workings of the mind. The basic premise of the new Pavlovian model of personality is that there is nothing in man that transcends in principle the conditioned salivary responses of Pavlov's dog.*

* For the sake of historical accuracy, it should be recorded that one N. P. Antonov, a psychologist from the town of Ivanovo, raised a lone and ineffectual voice of protest against this basic premise. In an article contributed to Problems of Philosophy (No. 1, 1953, p. 197) he wrote: "By attempting to reduce the whole psyche to reflexes, to temporary connections, we are thereby equating the salivation of a dog at the sound of a metronome with the most intricate phenomena of the spiritual life of man, with the conscious activity of people, with the brilliant creations of human intelligence in

From this starting point, Soviet psychology inevitably moved back into a rigid environmental determinism. The leading spokesmen of the neo-Pavlovian movement never tire of pointing out that the Pavlovian model of personality is deterministic. The psyche's existence is not denied, but all causal determination is shifted to the external environment, natural and social. "The causes of psychological facts," says Smirnov in a typical formulation, "are influences emanating from without, primarily influences of a social character."⁵⁸ According to another authority, "determinate agents of the external world are the cause, the impetus, of determinate activity of the organism."⁵⁹ In taking this position the Soviet psychologists see themselves as applying to psychology the principle of the unity of organism and environment which the Michurinist doctrine had applied to biology. Just as Michurinism denied the existence of autogenetic forces in animals and plants, so neo-Pavlovianism denies the existence of psychogenetic forces in man. The result is to deprive the human being of all spontaneity, all inner sources of activity. He is jerked into motion, tugged this way and that, by "determinate agents of the external world" in which all causal efficacy resides. This is a view which might have been summed up in the slogan:

poetry, art, science, social and political life." Antonov's article immediately became the object of severe and concerted attack on the part of the other psychologists. But the quoted statement is valuable as an acknowledgment from a Soviet source of the full implications of the neo-Pavlovian trend.

Overboard with self-determination! It marked a clean break with the conception of the New Man. Employing the terminology of the American sociologist Riesman, the transition from the New Man to the Pavlovian model of personality can be described as a shift from an "inner-directed" type, whose character operates as an autonomous determining force in his life, to an "other-directed" type, whose behavior is guided by signals received from outside. In the Soviet version, however, the sole source of the signals to which the "other-directed" person responds is the state.

To the outsider who studies the materials of the neo-Pavlovian movement, nothing is more striking than its insistent endeavor to empty man of all inner springs of action, to visualize human nature as motivationally inert. This New "Hollow" Man has no wishes, instincts, emotions, drives, or impulses, no reservoir of energies of his own. The whole range of motivational constructs has been deleted from the picture of personality. No motive is allowed to intervene between the stimulus emanating from the environment and the person's reflex response. Rubinstein, for example, protests vigorously against the notion that the individual has "inner impulses" (drives, instincts, tendencies, etc.) which underly his reflexes and "guide the action of the reflex mechanisms in a direction desirable to the organism." His new view is as follows:

The Pavlovian conception of reflex action does not require and does not allow for any "motive," drive or

impulse lodged behind the reflex, in the depths of the organism, which by some means unknown to us sets the reflex mechanism in motion.⁶⁰

True, a person's responses are seen as influenced to some extent by his habits, but these in turn are a crystallization of past conditioning and consequently an integral part of the system of reflex mechanisms. As for needs, they are allowed a curious kind of putative existence. Needs, says Rubinstein, are "built in to the reflex activity itself." They are the organism's irreducible demands upon the conditions of life but are, in turn, formed in the course of development "by those very conditions of life which they demand."⁶¹ Needs, in other words, appear to be the environmental situations corresponding to the organism's elementary unconditioned reflexes. But this hereditary equipment, according to the tenets of Michurinism, evolves in response to changes in the environmental conditions. The environment remains at all times the controlling factor.

These propositions formed the basis for an attack upon the American school of "learning theory," which is itself in large part an outgrowth of Pavlov's pioneering work on the process of conditioning. The Soviet psychologists joined the issue over American use of the concept of drives as an intervening variable in the explanation of purposive behavior. According to the theory developed by Clark Hull and his associates, for example, four factors are involved in the conditioning process: drive, response, cues, and reward.

The drive generates random purposive responses, which take place amid respective configurations of environmental cues. Reward, or the diminution of the drive, reinforces the successful sequence of responses along with its associated configuration of cues. Renewal of the drive will eventually elicit this sequence straight away, and, in going through it, the organism will be guided by the particular set of cues with which it is associated. In the new Soviet model of the conditioning process, drive (and by implication, reward) is eliminated from this list of factors. Nothing remains but the cues and the responses and their interconnections. The American students of conditioning who have introduced drives or impulses as intervening variables are denounced for "falsifying the real Pavlov."

This extreme antisubjective trend showed up in many forms. One was the denial of all validity to introspective methods in psychology. Another was a move to contest the legitimacy of experimentation connected with the psychology of the "set." The theory of the set emphasizes the role of conscious or unconscious expectancies in the determination of behavioral reactions. For many years the Institute of Psychology of the Georgian Academy of Sciences in Tbilisi, under the direction of Professor D. N. Unadze, had centered its experimental program around this problem. In 1952, at the height of the neo-Pavlovian movement, Professor Unadze was assailed for championing the theory of the set, and the whole conception

of the determining role of expectancy was branded as "idealistic and anti-Pavlovian."⁶² The reason for the attack was that expectancies mediated the relationship between stimulus and response. They were an intolerable wedge driven into the unity of the organism and the environment. Since no subjective factors could be allowed to intrude into this relationship, the seemingly innocent set had to go the same way as the motives, drives, and impulses.

The Pavlovianism of the twenties and the neo-Pavlovianism of the fifties shared an emphasis upon the determining role of the environment, but they differed radically in their respective ways of conceiving the environment. The later Pavlovianism, as mentioned above, partitioned the environment into (1) the social order at large and (2) the state-controlled media of communication. Whereas the earlier reflexological movements had been aware only of the former, the new Pavlovianism focused all attention upon the latter. The reflexes of Soviet people are to be conditioned or reconditioned not by ameliorating the social order but by properly manipulating the media of communication. Thus the neo-Pavlovian movement is associated with the idea of reforming the conditions under which people learn rather than those under which they live. The social order (Socialist Reality) is to remain more or less intact. It is only the methods of training Russians to live in it that are due for refinement. As Rubinstein says, the thesis of environmental determinism "has created a theoretical

foundation for the directed alteration of psychic activity" and makes it possible for psychology to become a "transforming science which assists the practice of socialist construction, the cause of communist education."⁶³ Evidently Stalin was drawn to Pavlov's teaching in part because of the potentialities which it seemed to him to hold out for revolutionizing the techniques of education and indoctrination, for placing thought control on a scientific foundation. And this is the probable source of the extraordinary preoccupation with the problem of language which characterized the neo-Pavlovian movement from its outset.

The linguistic orientation which Stalin imparted to the neo-Pavlovian movement has already been touched upon in the passage above concerning the contemplated role of speech therapy in the cure of certain organic disorders, such as hypertension. In the reconstruction of Soviet psychology, the conception of the regulative function of language took on decisive importance. And it was at this point that Stalin's theoretical interests impinged most directly upon the new movement in psychology. In emphasizing the all-important role of language in conditioned-reflex behavior at the human level, the Soviet psychologists referred constantly to Stalin's "Marxism and Problems of Linguistics," a series of papers which were published in the summer of 1950. The first and longest of these papers appeared in Pravda only two days prior to the announcement of the forthcoming Pavlov session, and this close coincidence in time is probably an indication of the

intimate relationship in Stalin's mind between the linguistic doctrines which he enunciated and the revival of Pavlovianism in physiology and psychology. Such a relationship was, at any rate, taken for granted by the psychologists themselves. According to Smirnov, for example, Stalin's work on linguistics is the sole foundation upon which the reconstruction of psychology in the light of Pavlov's teaching can be correctly carried out. In another typical statement, he calls this work a "theoretical foundation of scientific psychology." This is a view echoed by all the participants in the Pavlovian movement. Even after making due allowance for the ceremonial character of such expressions, the fact remains that Stalin's new professional interest in linguistics left its mark upon the subsequent developments in physiology and psychology.

The passages of Stalin's work on linguistics which are quoted most frequently by the psychologists are those in which he stresses the enormous significance of language in all departments of social activity, and the inseparability of language and thought. With reference to the first point, he writes that language is directly linked with every activity of man "in all areas of his work." It "embraces all the spheres of activity of man" and is "virtually unlimited." Moreover, Stalin equates language with word-language, rejecting the notions about gesture-language and wordless thought, which had been emphasized by the founder of Soviet linguistics, N. Ya. Marr:

It is said that thoughts arise in a man's head before they are expressed in speech, arise without linguistic material, without a linguistic wrapping, in naked form so to speak. But this is completely mistaken. No matter what thoughts may arise in a man's head and no matter when they may arise, they can arise and exist only on the basis of linguistic material, on the basis of linguistic terms and phrases....The reality of thought is manifested in language. Only idealists can talk about thought dissociated from the "natural matter" of language, about thought without language.

Gesture-language, says Stalin, is not language and not even a substitute for language, but only "an auxiliary instrument with extremely limited facilities which a man sometimes uses to stress this or that point in his speech." And confronted with a question about the language used by the congenitally deaf-and-dumb, he answers that "linguistics deals with normal people possessed of language and not with anomalous deaf-and-dumb people who do not have language."⁶⁴ Thus, language to Stalin means word-language exclusively, it is inseparable from thought, and it penetrates and pervades every aspect of the social behavior of man. These propositions formed a starting point for constructing the new Pavlovian model of personality, which pictures man as a creature whose behavior is controlled and regulated by verbal signals.

The concept of the "second signal system" provided a connecting link between Stalin's generalities about language on the one hand and the theory of conditioning on the other. This concept is one which Pavlov casually developed in some of his later writings and in conversations with his students. The minor part which it played in his system can be judged

from the fact that there are scarcely more than a dozen brief references to it in all his writings and recorded conversations. His idea seems to have been that word-language functions in the context of the individual human being's behavior as a system of verbal signals, higher-order conditioned stimuli which evoke indirectly the same responses as those conditioned to non-verbal stimuli. One of the most striking features of the neo-Pavlovian movement is the disproportionately heavy emphasis which it places upon this minor appendage of the original Pavlovian system. Until 1950, the concept of the second signal system had been generally ignored by Soviet psychologists. Among the physiologists, the only two who gave it much attention were--significantly enough--Ivanov-Smolensky and Bykov. Then, however, it was lifted out of obscurity and erected as the central pillar of the new Stalin-Pavlov system of psychology. According to Rubinstein, "all the specifically human characteristics of the psyche" are revealed in the functioning of the second signal system.

The Pavlovian revolution placed great emphasis upon the semantic side of Pavlov's theory of conditioned reflexes. In fact, the Soviet neo-Pavlovianism of the early fifties is essentially a theory of semantics constructed on a physiological basis. The foundation upon which the whole structure rests is, in the words of Bykov, the "principle of signalization." The concomitant of a stimulus, such as the

sound of the metronome in Pavlov's well-known experiment with the dog, becomes a "signal" of the presence of the stimulus (in this instance, food) and evokes the reflex action appropriate to it. The totality of concomitants which in the natural life conditions of the organism take over the stimulus function and serve as signals constitute, in Pavlov's terminology, a "first signal system of reality." The first signal system is common to man and animals. But at the human level an "extraordinary addition" emerges in the form of speech. Speech is a system of signals of the second order, "signals of signals" in Pavlov's phrase. It forms in its totality a "second signal system of reality," which is peculiar to man and which, according to Pavlov, operates on the same fundamental laws as those that govern the conditioning process at the lower level. The word, says Pavlov, is just as real a conditioned stimulus as all those which man has in common with the animals "but is at the same time all-embracing, not comparable quantitatively or qualitatively with the conditioned stimuli of animals." Finally, the generalized verbal signals comprised in the second system are assigned a position of hegemony in the life of man; the second system takes precedence over the first in orienting the human being in his environment. This is the substance of Pavlov's "wonderful idea" of the second signal system, which, according to Bykov and others, had heretofore been mistakenly ignored by Soviet science.

In using the phrase "signals of signals," Pavlov apparently had in mind the view that the word is a generalized "substitute signal" of the object it denotes and, as such, evokes the behavioral reaction appropriate to the object in the same way that the sound of the metronome evokes in the experimental dog the behavioral reaction appropriate to the signalized food. Since this line of speculation was outside the direct purview of his scientific work, he did not pursue it further. However, his present-day Soviet followers accepted it as the literal truth and made it the cornerstone of the new psychological theory which they had been ordered to build on a Pavlovian basis. The theory rests squarely on Pavlov's surmise that verbal substitute signals evoke behavioral tendencies or reactions in the same way that ordinary conditioned stimuli do. One current writer, for example, illustrates the thesis as follows:

By mastering the word, ~~that~~ is, by learning to pronounce the appropriate auditory complex and to relate this complex correctly to specific objects, the child masters the significance of the given word. After that the word can play the part of a signal of signals: the word "apple" can signalize the very same stimuli as those evoked by a real apple.⁶⁵

If, in other words, the sight of an actual apple lying on the table will cause a hungry child's mouth to water, hearing the word "apple" will eventually, after the proper language training, evoke a similar reaction. The function of words is, then, to trigger behavioral responses appropriate to the objects with which people have been trained to associate the words.

We may note here that this Pavlovian concept of the function of language is appropriate to a hypothetical primitive condition of man in which speech was exclusively an instrument of social control and had not yet acquired an autonomous representative function. By treating words as second-order signals to action, it overlooks the acquired symbolic function of language. The distinction between words used as signals to action on the one hand and purely as symbols of their objects on the other is illustrated by an American semanticist in the following way:

A term which is used symbolically and not signally does not evoke action appropriate to the presence of its object. If I say: "Napoleon," you do not bow to the conqueror of Europe as though I had introduced him, but merely think of him. If I mention a Mr. Smith of our common acquaintance, you may be led to tell me something about him "behind his back" which you would not do in his presence....Symbols are not proxy for their objects, but are vehicles for the conception of objects.⁶⁶

The failure of the Soviet psychologists to recognize and take account of this crucial distinction is no mere accident. The practical importance which was discerned in the neo-Pavlovian movement, its electrifying educational implications to the Stalinist mind, depended entirely upon reducing language to its signal-function exclusively, upon regarding words as "proxy for their objects." The whole movement would have collapsed instantly had its initiator forced himself to consider the possibility that words can be employed purely symbolically as neutral vehicles for the conception of objects. The goal was to treat language as an

instrument of social control. For this purpose it was imperative that words should always be signals which touch off responses appropriate to their meaning. Here was the needed link between semantics and politics. As Smirnov expressed it, the Pavlovian teaching reveals the conditions under which stimuli, including verbal stimuli, become signals "and by virtue of this fact regulate the behavior of man"⁶⁷ [*Italics added*]. On this view of the function of language, a person hearing the word "Napoleon" should indeed make at least a mental bow to the conqueror of Europe, or whatever other gesture his earlier conditioning had linked with this verbal signal. Or, to take a familiar example from the Soviet context, on hearing the signal "warmonger" a properly Pavlovianized Russian should respond with a shudder of fury. Granted the initial premise that the word is in every case primarily a call to action, linguistics logically takes its place at the head of the list of political sciences. Of all the monopolies enjoyed by the Soviet state, none would be so crucial as its monopoly on the definition of words. The ultimate weapon of political control would be the dictionary.*

At this point it may be useful to summarize briefly the argument of the foregoing pages. I have suggested that the movement initiated by Stalin to reconstruct Soviet psychology marked a decline of the optimistic conception of

* It is of interest in this connection to note the extraordinarily intense activity, after 1950, in the writing and rewriting of dictionaries in the Soviet Union.

man which had officially prevailed in the U.S.S.R. since the early thirties. This in turn was an indirect reflection of the fact that millions of Russians, especially under the impact of their experience during and after World War II, showed tendencies to deviate radically from the norm of Soviet selfhood which, according to the optimistic conception, they should have naturally assimilated as a result of their education and spontaneous personality development. In the face of this disturbing fact, Stalin resorted to the peculiar mode of coming to terms with perverse situations which we have termed "transformism." In the Pavlovian model of personality he found a formula which seemed to place human nature in the arbitrary power of a state-controlled educational environment. Emptied of all inner springs of character and conduct, man appeared in this model as a passive plaything of determining influences from without, particularly influences of a social character brought to bear through the medium of language. By mastering the "objective scientific laws" of the language-conditioning process, the state could--theoretically--bring about the "directed alteration of psychic processes," i.e., it could transform the minds of its citizens, mold them in the Soviet personality image. The crowning concept of this theoretical edifice was the second signal system. In the Stalin-Pavlov model of man, the second signal system is the mechanism of mentality. Consciousness is the distinctive capacity of human beings to respond to and regulate their behavior

by verbal signals. Man is basically a signal-receiving animal. And since it is the state which calls the signals, an appropriate name for this theoretical new species of Soviet humanity would be "state-directed man."

The state-directed man bears a significant resemblance to persons in the neurotic condition known to modern psychiatry as self-alienation. The self-alienated person lacks a clear sense of personal identity and the inner directive powers normally associated with it, such as the faculty of active choice, independent decisions, awareness of his own feelings and opinions, the urge and capacity to pursue his own goals and satisfactions, etc. While frequently he is quite capable of going through the motions of work and participation in society, he has the feeling of "not being a moving force in his own life."⁶⁸ Lacking clear and active wishes of his own, he tends to respond compulsively to the wishes and expectations of others or to what he imagines these to be. It is easy to recognize in this picture a replica of the type of personality described above. The state-directed man is, above all, a person bereft of autonomous inner motivations and dependent for the determining of his conduct upon verbal cues given from without. His every action is strictly determined, i.e., compulsive. Like the self-alienated person of psychiatry, instead of acting he reacts. He lacks a real self capable of going its independent way and forming its own values and

beliefs. His personality thus presents a void which the political authority can fill in with the standard content of the Soviet personality-image.

Recent Developments and Policy Implications

The interpretation offered here of the neo-Pavlovian chapter of Soviet thought assigns a crucially important place to Stalin. The evidence for such a view converges from a number of directions. First, there is the direct public testimony of Bykov, Rubinstein, and others that Stalin initiated the back-to-Pavlov movement. Allowing for a certain amount of overstatement in the interests of flattery, such testimony is still fully consistent with the propensity which Stalin showed increasingly in his later years to assert his authority far and wide in intellectual fields as diverse as philosophy, military science, biology, linguistics, and economics. Secondly, the neo-Pavlovian movement was in its way an outgrowth, an extension to man, of the Michurin-Lysenko line in biology, which enjoyed Stalin's personal patronage.* Further, it was closely linked up with

* In an article published a few days after Stalin's death, Lysenko revealed that Stalin had directly edited the report, "On the Situation in Biological Science," which Lysenko read at the genetics discussion of 1948. Stalin, he said, "explained to me in detail his corrections, and provided me with directions as to how to write certain passages in the paper." Stalin's private secretary Poskrebyshev cast some light upon this matter in an article which he wrote for the celebration of Stalin's seventieth birthday in 1949. He said there that Stalin was an amateur horticulturist and had been the first to prove the possibility of growing citrus fruits in the North Caucasus (probably at Sochi, where Stalin spent long periods each year during

the ultra-deterministic conception of scientific law which he developed in his final work on political economy. Finally, in its medical aspect, the movement impinged upon an area in which Stalin had shown all along, and especially toward the end, a most intense personal interest. These various indications of Stalin's role as the instigator and guiding spirit of the Pavlov revival lend special interest to the course which the movement has taken since Stalin died.

The Pavlov line was not immediately affected by Stalin's death. For some time, articles written in the spirit of the fervent Pavlovianism of 1950-1952 continued to appear in Soviet publications. As late as August, 1953, Bykov was quoted in a Soviet journal as saying: "We must preserve the purity of the Pavlov teaching, which has affected all major issues of contemporary natural science."⁶⁹ Nevertheless, although the line remained in force, there were signs as early as the middle of 1953 that the impulse behind the movement was beginning to slacken in intensity. A somewhat more flexible attitude toward the Pavlov teaching was apparent at a conference of psychologists which was held in July, 1953, in accordance with a decision passed at the first all-union conference of psychologists in 1952. Although the second conference was conducted in a spirit of Pavlovian orthodoxy,

the postwar period). This would have been an instance of the technique of eliciting new breeds by placing organisms in unfavorable conditions of growth to which they would either adapt themselves or die. Lysenko placed this idea at the foundation of his theory of heredity. Stalin was apparently an enthusiastic proponent of it.

its emphasis was placed upon empirical rather than theoretical issues, and previously denounced trends, such as Unadze's theory of the "set," were dealt with in a somewhat more tolerant manner. The conference, for example, decided that the theory of the set, though not a thoroughly Pavlovian point of departure in psychology, might still have "a limited sphere of application," and Rubinstein, as chairman of the Scientific Council on Psychology, announced that a "discussion" would shortly be held on problems arising out of it.⁷⁰

Meanwhile, the journal Problems of Philosophy continued through 1953 and early 1954 to print articles on the reconstruction of psychology, but the volume of space devoted to this subject dwindled, and the articles themselves grew less dogmatic in tone. A popular scientific film about Pavlov (with Bykov as chief consultant) was released in July of 1954 and reviewed with rather mild approval in the press. Soviet psychologists attending the International Psychological Conference in Montreal, in the early summer of 1954, gave reports which were thoroughly Pavlovian in substance. However, they confined themselves to empirical generalizations of experimental material and refrained from attempts to make an international ideological issue out of the Soviet adherence to Pavlov. Finally, the press gave indication in early 1954 that the endeavor to Pavlovianize the medical sciences had been somewhat relaxed.

In a speech in February, 1954, Party Secretary Khrushchev launched an indirect attack upon Lysenko by criticizing the indiscriminate application throughout the Soviet Union of the theory of grass-crop rotation which Lysenko had incorporated into his system of agrobiology. The scientific opponents of Lysenko were allowed to attack his dictatorial ways and to challenge the scientific credentials of his theory of species formation by environmental means. In April, 1954, the Party theoretical journal Kommunist published an editorial, "Science and Life," in which it stressed the imperative need for criticism in the sciences and pointed out in very strong terms the harmfulness of scientific "monopolies" such as that which Lysenko's school had enjoyed. These themes were not innovations of the post-Stalin period.* Stalin himself had inveighed against "talmudism and dogmatism" in science. In 1950, he blasted the monopoly ("Arakcheev regime") which Meshchaninov and other disciples of Marr had established in linguistics. But, with typical inconsistency, Stalin established a new monopoly in linguistics in the very act of destroying the old one. The same pattern of change was followed throughout the realm of science. The evolution of science under Stalin invariably took the form of a circulation of monopolies. Although it is too early to judge by results, the post-Stalin

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There were some signs of a reaction against the extreme form of Lysenkoism a few weeks before Stalin's death.

campaign against the monopolistic principle has appeared, thus far, to stem from a desire to break away from the Stalinist pattern.

In an article published in Pravda in early July, 1954, a professional scientist was allowed to give voice to the demand that scope for competing viewpoints be allowed in the natural sciences. Academician S. L. Sobolev, a physicist, pointed out in this article that new and interesting scientific discoveries "are always connected with the abandonment of preconceived points of view, with the bold breaking down of old norms and conceptions." He protested against the deeply rooted practice of pinning on one's scientific opponents such derogatory labels as "idealist," "reactionary," etc. Scientific trends, he maintained, ought not to be judged on a wholesale basis as all black or all white. On the contrary, allowance should be made for positive and negative elements in every scientific development. In addition to these generalities, Sobolev's article included a vigorous defence of Einstein's merits as a physicist against prominent members of the physics faculty of Moscow University, who had rejected the theory of relativity. Finally, he attacked the claims of certain Soviet scientists to infallibility, and observed in this connection:

There are known instances of articles lying for long periods in editorial offices of Soviet journals whose authors were in some way not in agreement with the established views of certain scientists, such as,

for example, Academician T. D. Lysenko, Academician K. M. Bykov and Professor A. G. Ivanov-Smolensky.⁷¹

Here, for the first time, the names of the two chief proponents of Pavlov were bracketed with that of Lysenko in the context of the campaign against monopoly in the natural sciences. To the psychologists and physiologists of the Soviet Union the inference could only be that the twin dictators of the neo-Pavlovian movement had fallen from the position of official infallibility.

Sobolev's protest against the dictatorial position occupied by Bykov and Ivanov-Smolensky was soon followed by a reaction against the Stalin-Pavlov line in psychology. It came in the form of an editorial summation in the journal Problems of Philosophy of the whole discussion of recent years on the reconstruction of psychological theory.⁷² The full significance of this editorial becomes apparent only against the background of all the preceding developments traced earlier in this essay. For example, it does not reject Pavlov, but rather reaffirms his position as a founder of Soviet psychology. In this way, the authors of the statement manage to convey an impression of continuity with the immediate past. But within this framework of formal adherence to a Pavlovian orientation, much is altered. The change shows up partly in trivial ways. For instance, instead of saying that Soviet psychology should be reconstructed "on the basis" of Pavlovian ideas, the editorial says only that the reconstruction should move "in the direction" of them.

Furthermore, it casually reduces the importance (previously described as historic) of the Pavlov session of 1950, observing merely that it gave "a certain impetus" to the reconstruction of psychology. These minor equivocations are easy to overlook. But the Soviet psychologists, trained by their whole life experience to read between the lines of official documents, would not do so.

The reaction against the Stalin-Pavlov line is most evident in the fact that this editorial restored the traditional concept of consciousness and subjectivity to a respectable position in psychology. First, it redefined psychology in pre-1950 terms as "the science of the psychic activity of man." Next, it announced--with something of an air of discovery--that psychic activity is both real and subjective in nature: "The subjective--man's psyche--really exists." "Psychology as a science is addressed to the subjective world of man." And the subjective world of man is now said to be accessible to self-observation, to introspection. Here the editorial makes an explicit break with the Stalin-Pavlov line. It reproaches the 1952 conference on psychology for banning the introspective method from psychology: "One cannot agree with the unconditionally formulated decision of the conference on psychology that 'introspection is not to be regarded either as a main or auxiliary method of psychology.'" The editors of Problems of Philosophy draw upon none other than Pavlov

himself in support of their rediscovery of the subjective world of man. They cited a previously slighted statement of Pavlov: "It would be stupid to deny the subjective world. It goes without saying, of course, that it exists. Psychology as a formulation of the phenomena of our subjective world is a perfectly legitimate thing, and it would be ridiculous to dispute this." Several more such quotations are included for emphasis, such as a remark once made by Pavlov that "I do not deny psychology as knowledge of the inner world of man." Clearly, the post-Stalin Pavlov is Pavlov with a difference.

Having rediscovered the subjective world of man, the editorial tells the Soviet psychologists not to be afraid to describe it by means of the familiar psychological classifications whose reality had lately been questioned: mind, feeling, will, imagination, etc. Here again Pavlov himself is enlisted in the revolt against Stalinist Pavlovianism: "Such concepts as association, sensation, impression, memory, representation, attention and others are used by I. P. Pavlov as legitimate concepts in psychology." "...I. P. Pavlov did not consider it necessary to renounce the traditional view of psychic phenomena as relating to the sphere of mind, feeling, and will." Adds the editorial: "This observation we address to certain nihilistic tendencies in the matter of the so-called recasting or redefinition of the psychological terms and concepts on the basis of the

Pavlovian physiology." The reader will recall that what are here spoken of as "certain nihilistic tendencies" were actually part and parcel of the Stalin-Pavlov line. The recasting of the psychological concepts in terms of observable regularities of conditioned-reflex behavior was advanced in 1952 as the very crux of the mission of Soviet psychology. Now this assignment is being withdrawn. The reflex concept is not rejected in principle, but its importance to psychological theory receives diminished stress as the traditional concepts of mind, will, emotion, etc. are revived. And in harmony with this, the editorial refers in sharply negative terms to those who would "dogmatically apply to man" all the methods which Pavlov evolved in the study of the behavior of animals. The effect of this is to alter the theoretical orientation which was imposed upon Soviet psychology in 1950.

Let us now explore some possible policy implications of this latest authoritative statement about psychological theory. The Stalin-Pavlov line in psychological theory reflected an imperative need for a new formula of mind control by which Soviet people could be rendered completely receptive to the official propaganda image of the world and of themselves. Under pressure of this drive from the political authority, the psychologists began to construct a Pavlovian model of personality, basing it upon the denial of subjectivity and the reduction of human consciousness to

conditioned reflexes to external and internal verbal stimuli. Implicit in the model of the state-directed man was the insistence upon direct and coercive control over the minds of Soviet citizens. This meant that their personalities could be formed or transformed by perfecting the conditions and techniques of indoctrination, by altering the educative sector of the environment. The remainder of the environment, including the economic standard of life, would not have to be reformed to accomplish the objective.

If this interpretation is valid, then the presently discernible countertrend in psychology implies an incipient abandonment of the quest for that kind and degree of control. The reasons for this remain obscure. It might be that the need for direct and coercive mind control is not now felt so acutely; it may be that Stalin's successors appreciate better than he did that the inherent spontaneity of the human personality will always defeat the effort at total control; or, finally, it may be that until now the new rulers have simply not been in a strong enough position to persist with the effort. The passage of time will probably cast some light on this important question of motive.

Relaxation of the search for a formula of mind control does not, of course, mean that the Soviet regime has relaxed all efforts to control and influence popular attitudes. Its internal propaganda activities show no sign

slackening in scope or intensity, and it has recently been giving some attention and effort to indirect and manipulative means of opinion control. The program of limited economic amelioration which Malenkov first announced in August, 1953, was connected with this shift, as was his emphasis on increasing material incentives for the peasants (lower individual taxes, higher compensation for work on the collective fields, regular advances of pay in kind, etc.). From the internal political point of view, these moves--while they lasted--could be looked upon as part of an indirect approach to the crisis of popular morale in Russia. In contrast to Stalin's quest for a direct solution via mind control, the indirect approach perhaps was an attempt to reduce discontent and disaffection by altering the life conditions of large numbers of Soviet citizens, by making their material mode of existence more bearable. In terms of the Soviet theory of a "partitioned environment," it involved a shift of emphasis from the educative sector to the remainder of the social order, from the conditions of learning to the conditions of living. Whether the indirect approach will continue and whether, if it continues, it can succeed any better than the direct approach did is, of course, in the lap of the future.

The recent anti-vice campaign offers a further example of the tendency to employ an indirect approach.

For some months the Soviet authorities have pushed a drive to curb drunkenness, crime, juvenile delinquency, etc., the very existence of which on a wide scale was never acknowledged during Stalin's last years. A "transformist" response to this problem would have called for harsh, coercive measures to punish and deter, together with an effort to remold the outlook of deviant elements by means of indoctrination. The post-Stalin response has differed in some ways from this pattern. Cases of chronic alcoholism are treated by conditioning techniques based on the teachings of Pavlov. Heavy use is being made of propaganda to mobilize public awareness of the problem and support of the campaign. The authorities tend now to admit that widespread drunkenness and juvenile delinquency are related to the objective life conditions of the Soviet people, and that the government will have to do something to improve these conditions in order to combat the evils which cause it concern. In August, 1954, the Deputy Minister of Public Health called for more athletic and other recreational facilities for the youth so that its leisure time would be taken up with harmless pursuits. Instead of more severe legal penalties for deviant individuals, he advocated that the government regulate more strictly the sale of alcoholic beverages by its own establishments.⁷³ These suggestions disclosed something new in the mode of official thinking. The novel element

was the indirect approach, a tendency to think in terms of bringing situations under control by adjusting external conditions rather than directly transforming human beings.

Another recent episode which lends itself to interpretation within this frame of reference is the rise and decline of militant atheism. A revival of militant atheism was inaugurated in August, 1954, along with the anti-vice campaign mentioned above, and appears to have been conceived in upper Party circles as a part of the latter. It consisted of coercive pressure against clergy and believers, exerted to the accompaniment of a din of antireligious propaganda in the press and other channels. The Party was following the Stalinist "direct approach," relying upon sheer compulsion and massive indoctrination to control attitudes. However, the campaign had been in progress for only about three months when it was stopped by a decree of the Central Committee signed by its first secretary, Khrushchev. The decree reaffirmed the Party's "materialist world-concept" against all forms of religious belief, but condemned the use of coercive pressure in the continuing endeavor to inculcate materialism. Two aspects of this document are particularly notable. In the first place, it lays down the line that atheism must not be included in the official definition of loyalty. During the antireligious campaign, believers had in some places been represented as politically suspect. In opposition to this, the Khrushchev decree

declares that it would be "stupid and harmful to place this or that Soviet citizen under political doubt owing to his religious convictions."⁷⁴ These words may be a sign of a tendency to renounce the goal of direct mind control. Secondly, the Khrushchev decree closes with an unprecedented suggestion that the only effective way of combatting religion is to take people's minds off it. Positive results in the effort to overcome "religious survivals" can only be achieved through a considerable improvement of cultural and recreational facilities, such as clubs, libraries, and parks of culture and rest. Here is another example of the indirect approach which seeks manipulative control of a phenomenon by altering the conditions with which it is associated. It is doubtful that the indirect approach will succeed to any important extent where religious beliefs are concerned, but the tendency to resort to it is significant.

The Stalinist quest for a formula of direct mind control was only one in a series of expressions of the transformist mentality. It was part of a whole configuration of thought and policy which became increasingly dominant from 1948 on. Consequently, it is not surprising that the most recent retreat on the psychological front was accompanied by numerous other signs of a decline of the transformist complex. For example, Stalin's ambitious project for transforming the face of Moscow by erecting skyscrapers rivaling those of

America was abandoned. The Soviet authorities ordered a stop in the construction of one of the big skyscrapers which was being erected near the Kremlin. Present plans call for the construction of buildings of a more practical size, not to exceed ten or twelve stories, and protests against architectural pretentiousness have been voiced in the Soviet press. In agriculture, Stalin's grandiose scheme for "product-exchange" based on the transformation of collective farms into state farms was shelved by his immediate successors in favor of a comparatively pragmatic program for increasing agricultural production within the existing organizational framework. Lysenkoism, with its flashy promises to "make evolution" and remold organic forms to the dictates of the Soviet regime, was supplanted by a more cautious and experimental approach to the problems of agricultural technique. The current vogue in this field is a method of shallow ploughing evolved by an agronomist named Maltsev, who apparently based his work on earlier American experimentation. During the heyday of Lysenko, Maltsev's results were suppressed. Now they have received official blessing, and it is possibly indicative of an altered mode of official thinking that Maltsev and others have been allowed or encouraged to issue a warning against making a fetish out of this new method and applying it with rigid indiscriminateness throughout the country.

The most important single sign that transformism may be subsiding is the abandonment of the "Stalin Plan for the Transformation of Nature" as one of the grand objectives of Soviet internal policy. Many of the individual projects comprehended under this imposing scheme are being completed, but others are being abandoned, or else continued on a reduced scale. Some of the "Great Construction Projects of Communism," such as the Stalingrad and Kuibyshev hydro-electric power projects, are being pushed to completion, but others, such as the Main Turkmenian Canal, have apparently been discontinued or greatly scaled down. The vast program for protective afforestation in the arid steppe regions of the U.S.S.R. has been curtailed. On the whole, the practicable elements of the scheme are being salvaged, but the scheme as a whole seems to have died with Stalin. This fact was illustrated in an indirect way at a conference on protective afforestation, which was held in Moscow in November, 1954. A forestry official, who was the principal speaker at the conference, reported that in the summer of 1954 an experimental study had been carried out in 580 collective farms of droughty regions of the country to determine the precise influence of forest shelter belts on grain yields. The result, according to the speaker, was that shelter belts cause a modest increase of yield when the trees composing them reach three to five years of age.⁷⁵ The interesting implication of this

report is that the practical value of a program begun in 1949 on a tremendous scale was not experimentally tested until 1954. The outcome, as the speaker indicated, seemed to justify some further effort in planting shelter belts, but the proposal was not presented in the context of a scheme to transform nature. Similarly, the phrase "Great Construction Projects of Communism" has been dropped from the lexicon of the Soviet press. A given individual project may be justified, but not in the context of the will to transformation. The new selective approach to economic development projects emerges from a change of underlying motivation.

The Stalinist will to transformation, as mentioned earlier, was accompanied by a cult of necessity. Though couched in the form of a demand for objective scientific laws, this cult had no relation whatever to modern scientific thinking, which is satisfied with statistical probabilities and approximate knowledge. On the contrary, it expressed a stringent nonscientific need for subjective reassurance against the possibility that the grandiose schemes for the transformation of nature, society, and man might miscarry. It is interesting to note, therefore, that the post-Stalin relaxation of the will to transformation has been accompanied by a partial subsiding of the cult of necessity. In the recently published textbook of political economy, which was to have been based upon Stalin's thoughts as set forth in

his work of 1952 on this subject, the theme that Soviet economic policy must conform to objective economic laws does not receive the disproportionate stress which Stalin gave to it. Economic laws are duly described as objective in character and as being dangerous to ignore. But this idea is treated in a rather perfunctory way. What is more important, the cult of necessity is directly challenged. K. Ostrovityanov, the chief editor of the new text, writes in a press review of its contents that to regard economic laws in terms of unalterable necessity is no less harmful than to deny their existence altogether. "Such a cult of laws," he adds, "is the theoretical justification for a policy of drift in the construction of communism."⁷⁶ The implication of this statement is that the cult of necessity, at least in the extreme form which Stalin's work gave it, rationalized an unwillingness to allocate some resources into a program of limited economic amelioration such as the immediate post-Stalin regime embarked upon. The will to transformation prevailed over the dictates of economic expediency. And the cult of laws was used as a means of backing up the resultant policy line. When the policy line veered, its ideological expression subsided.

At the core of the will to transformation and its associated cult of necessity lies an overwhelming need for total control of the entire environment, including the forces of nature. At least insofar as control of natural

forces is concerned, this need appears to have subsided in some measure since the death of Stalin. It is in seemingly inconsequential statements that this psychological change finds manifestation. For example, in August, 1954, the Moscow Literary Gazette printed an article under the title "Can the Weather Be Controlled?" It was written by a member of the Academy of Science in response to a reader's question. The article first reviewed some of the latest achievements of meteorological science, such as rain-making, which show that man can artificially alter weather conditions on a very small and spatially limited scale. But, it emphasized that these latest advances are still trivial and that man is not yet able in any real sense to control the weather on this planet: "Science still has no means at its disposal for the capital transformation of meteorological conditions on a wide scale."⁷⁷ In presenting this conclusion, which would have been heretical if voiced two years earlier, the academician wanted the reader to realize that it contradicted the pretensions underlying the "Stalin Plan for the Transformation of Nature." It is wrong, he said, to believe, as some do, that the weather changes of recent years in Soviet Russia are connected with "the newly constructed reservoirs, hydroelectric power stations, canals and other such circumstances" (i.e., the "Stalin Plan"). "It must be borne in mind that fluctuations of this kind have taken place previously in the historical

past. Thus, for example, temperatures such as those which we experienced this summer in the central zone were also experienced in these parts in 1891, 1892, 1920, 1936, and 1938." In other words, despite the colossal expenditure of effort on a plan to transform the natural environment, the weather in Russia is basically no different now from what it was in the reign of Czar Alexander III. The effect of the academician's remarks is to explode the presumption upon which Stalin's scheme for the transformation of nature was based. His message is that the scheme was faulty in its essential preconception that the climate is at the present stage of science controllable by man. In a deeper sense, he seems to be saying that, if unlimited control is not now an attainable objective, then the drive to attain it is irrational.

The foregoing remarks about post-Stalin developments indicate a change in certain patterns of official thought and response that were characteristic of the Stalin regime during its final phase. The change does not affect the formal goals of the Soviet power. It has to do with its approach to problems and situations, with its methods of reasoning and the motivations which underly them, and with its policy-making orientation. In the broadest sense, it might be described as a tendency to assess situations more factually and to evolve policies designed to alter reality piecemeal rather than to remold it at a stroke.

This, at least, has been the tendency thus far.

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